THE GENERAL BOARD

United States Forces, European Theater

ORGANIZATION, EQUIPMENT AND TACTICAL EMPLOYMENT OF THE AIRBORNE DIVISION

MISSION: Prepare Detailed Report and Recommendations on the Organization, Equipment and Tactical Employment of the Airborne Division.

The General Board was established by General Order Number 128, Headquarters, European Theater of Operations, U. S. Army, dated 17 June 1945, as amended by General Orders 182, dated 7 August 1945 and General Orders 312 dated 20 November 1945, Headquarters United States Forces, European Theater, to prepare a factual analysis of the strategy, tactics, and administration employed by the United States forces in the European Theater.

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ORGANIZATION, EQUIPMENT AND TACTICAL EMPLOYMENT OF THE AIRBORNE DIVISION

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CHAPTER

THE EMPLOYMENT OF THE AIRBORNE DIVISION IN EUROPE

SECTION 1

GENERAL

1. Object of study. The object of this study is to determine whether or not the airborne division as such should be retained in our army and, if so, what its organization, equipment, and tactical employment should be.

2. Basis. The study is based on Study Directive Number 142, R 320.2/49 TGBSY, The General Board, United States Forces, European Theater, 3 October 1945. (See Appendix 1.) Its conclusions and recommendations are supported by the contents of unit operations reports, the opinions of experienced commanders, and consideration of certain board reports covering changes in equipment and organization.

3. Scope. The development of this analysis of the airborne division covers the use of airborne troops in all of continental Europe and adjacent islands. It is not limited to the European Theater of Operations as such. It is felt that in view of the comparatively small number of airborne operations so far conducted the inclusion of data on the use of airborne troops in the Mediterranean Theater is justified, especially since the General Board had among its consultants senior commanders who had experience in the airborne operations in that theater. The operations considered include, necessarily, not only those of the division itself, but also those of larger commands of which the division was part.

SECTION 2

MISSIONS ASSIGNED AND THEIR ACCOMPLISHMENT

4. To attain the object of this study some consideration must be given to the employment of airborne forces during World War II. Intelligent recommendations as to the airborne division can be made only after it has been seen what missions such units were given in combat and how these were accomplished. Throughout this consideration, however, it must be kept in mind that airborne forces had never been used previously in our army; that organizers and commanders were feeling their way along unexplored paths. Rational conclusions can be drawn as to the value of the airborne division, its organization, equipment, and tactical employment if it can be seen that succeeding operations improved, and why.

5. Airborne operations in Europe. This section covers both the airborne and the ground missions assigned the airborne forces during their operations from the Sicilian Campaign in July 1943 to the end of the European War in May 1945. These are as follows:

a. Airborne operations:

(1) Sicilian Invasion July 1943.

(2) Salerno Beach Head Reinforcement 13 September 1943.

(3) Normandy Invasion 6 June 1944.

(4) Southern France Invasion 15 August 1944.

(5) Holland Invasion 17 September 1944.

(6) Rhine River Operation at Wesel 24 March 1945.

b. Ground operations:

(1) Sicily

(2) Italy

(3) Normandy

(4) Southern France

(5) Holland

(6) Ardennes

(7) Rhineland

(8) Central Europe

6. Sicilian Invasion.

a. In this operation, known as "HUSKY", the 82d Airborne Division was temporarily split. The majority of the parachute elements of the division were formed into a separate task force with the mission of landing in Sicily during the hours of darkness preceding H-hour on D-day. They were to land on a designated spot, seize a specific airfield and assist in the amphibious landing of the 1st Infantry Division.[1,2] Due to high winds and navigation difficulties, the paratroopers were "strewn over a large part of Southern Sicily".[1] Two of the battalions landed approximately 30 miles from their destination and greatly aided the 45th Infantry Division. A third battalion dropped approximately 55 miles away in the British sector and fought side by side with them for six days. A fourth battalion coming in on the night of D plus 1 had 23 of its troop transports shot down. Other units of the task force that landed in scattered areas aided the operation by individual exploits.

b. From the above it may be concluded that the Parachute Task Force did not accomplish its mission but the accomplishment was made impossible by its not being dropped even near its objectives. It did, however, accomplish a mission by its initiative and courage in forming up, fighting whatever enemy it could find and helping friendly troops.

c. The 82d Airborne Division less parachute elements attached to another task force had no combat mission but was to concentrate in Sicily by D plus 7 by air lift. This was accomplished and the parachute elements reverted to division control on D plus 3.[1]

7. Salerno Beachhead Reinforcement.

a. In the early fall of 1943 the enemy was near a breakthrough in the Salerno Beachhead. Reinforcements were badly needed lest the VI and X Corps be separated. The Commanding General, Fifth Army, in a personal letter received at the 82d Airborne Division Headquarters on 13 September at about 1400 hours, ordered the immediate support of the VI Corps by airborne troops.[2]

b. Planes took off that night. One parachute regiment (less one battalion) plus one company of engineers was dropped behind friendly lines on the beach to reinforce the VI Corps. They were to assemble and report for orders. The jump was a success and by dawn of 14 September the task force was in a defensive position.[2]

c. Another drop "GIANT III", was made on the same night. (It had been prepared in detail during the period 20 July to 13 September.) A battalion of parachutists was dropped far behind the German line about 20 miles from the beach high in a mountain valley to delay and harass the enemy. The operation was successful. Many of the troopers were not, however, contacted by ground elements for a period of three weeks.[2]

d. On the following night, 14-15 September 1943, another reinforced parachute regiment was dropped around and right on the south flank of the Salerno Beachhead in the same place and with the same mission as the regiment dropped the night before. There was a three-quarter moon. The jump was successful and without incident. Assembly was rapid and the unit was soon in position, mission accomplished.[2]

8. Normandy Invasion.

a. In this operation known as "NEPTUNE" both the 82d and 101st Airborne Divisions took part. In general their mission was to aid the amphibious forces to land and to secure the north and south flanks of the landing force. Specifically they were to do this by landing at night by parachute and glider, four to six miles inland from the coast and about five hours ahead of the dawn amphibious assault. They were to seize and hold the causeways leading inward from the beaches, take and hold certain designated river crossings, clean out all enemy within their assigned area and prevent the movement of any enemy reserves into the beachhead area.[3,4 & 5]

b. The general airborne mission was successful and all objectives were eventually taken and held,[5] however, there are degrees of success and this operation deserves closer study. To have been a perfect operation, all missions should have been accomplished and objectives taken by dawn or 0630 hours D-day when the first amphibious troops landed. This was not so, nor was it possible. The troop carriers flew across the Cotentin Peninsula (enemy territory) from west to east, a distance of about 30 miles, dropping their troops near the east coast. On making landfall heavy fog was encountered and some flak all along the route across land. The casualty effect on the planes was negligible but the factors fog, flak, and the loss of some pathfinders on the ground, scattered the planes and the troopers were badly dispersed upon landing.

c. The 101st Airborne Division's pattern was 25 by 15 miles, 70% of the troopers being in an eight mile square - they were supposed to have dropped in three drop zones all within three or four miles of each other. Of the 6600 troopers of the 101st Division who were dropped, 1500 landed so far outside of their area that they were killed or captured. By H-hour the division had only 1100 men on or near its objectives. These men were all mixed up and not the personnel originally assigned the missions. By nightfall the division strength was 2500.[4] In addition to the loss of men, 60% of their equipment was lost. In the words of their division commander "The division could not have maintained itself much over 24 hours without support."[4]

d. The 82d Airborne Division did not fare much better. For the same reasons they too were badly scattered over an area with a four mile radius. They dropped 6396 troopers and 3871 glidermen. Their total casualties for Normandy were 46.18% most of which occurred during the airborne phase. By nightfall of D-day about 30% of the division's forces were under control. By the conclusion of D plus 4 the division had for all practical intents and purposes accomplished its mission.[3]

e. "Although their pre-arranged tactical plans may not be carried out by the airborne troops as scheduled, the disruptive effect of the attack on the enemy compensates for the disorder in their own plans."[4] The 101st Airborne Division also accomplished all its missions but not on schedule. Throughout this initial period the divisions repulsed several heavy counterattacks thus protecting the beach landing force. Headquarters First United States Army reported as of D plus 4 "the landing had succeeded;"[5] i.e. the amphibious and airborne landing.

9. Southern France Invasion, Operation "DRAGOON". The invasion of Southern France took place on 15 August 1944. The airborne task force consisted of one regimental combat team, two separate parachute infantry battalions and one separate glider infantry battalion, all United States troops, augmented by British and French airborne troops making a force comparable to a division. The mission was to land by parachute and glider, seize certain objectives which would assist the landing of the amphibious force, and to block the movement of enemy reserves into the area. The drop was nearly perfect. Beginning at 0412 hours 90 percent of the troops were dropped on their proper drop zones - of 396 aircraft only 37 missed the drop zones. Troops quickly

assembled and accomplished their missions without serious difficulty. Total casualties for the operation were 283 or 3 percent plus, of these 178 were jump casualties and 105 battle. Enemy resistance was light. Not yet had airborne troops had a fair chance to prove their worth by being dropped properly and overcoming stiff enemy opposition.[6,7]

10. Holland Invasion.

a. The daylight airborne assault in Holland on 17 September 1944 is known as operation "MARKET". Both the 82d and 101st American Airborne Divisions took part. In general the airborne troops were to open a long corridor across northwestern Holland through which the British Second Army could pour onto the plains of Germany. To accomplish this they were to drop and seize bridges and defiles along the selected route.[8] The weather was good, air force casualties light and the drops good to excellent, scattered resistance was met and quickly overcome although the areas were not completely cleared, and all objectives taken the first day except the northernmost bridge of the American sector. This last and important bridge wasn't taken until D plus 3. Total casualties ran between 15 and 20 percent for the first 11 days.[8,9] This was the largest airborne operation in history to date, was a daylight operation, surprise was complete, the operation was successful and if the success seemed easy it was only because of the skill with which it was executed. Enemy pressure became greater daily but all ground was held and more taken besides.

b. This was the first airborne operation under the command of The First Allied Airborne Army. This army controlled and coordinated all phases of the operation including pre-invasion bombing, strafing and reconnaissance missions, D-day fighter escorts, anti-flak missions, the troop carrier operation, and all resupply missions. No longer was an airborne mission a matter of strict cooperation between air and ground forces but rather a unified operation under one command. This one fact alone probably contributed more to the success of this and succeeding operations than any other factor.

11. The Airborne assault across the Rhine River near Wesel, Germany on 24 March 1945 is known as "VARSITY". This was the last airborne operation in the European Theater and "it may well serve as a model for future airborne operations."[10] Two airborne divisions, the United States 17th and British Sixth were the participating troops. Their mission was to drop simultaneously by parachute and glider during daylight and to seize and secure their areas, including specific points such as commanding terrain, crossroads, and bridges. All this was to facilitate the crossing of the Rhine River by the British Second Army in their rear. Some 1595 aircraft and 1346 gliders were used to transport the two divisions, totaling 16,934 troopers into Germany. The first man dropped at 0952 hours and two hours and 42 minutes later the last man was on the ground.[10,11] All objectives were taken and all missions accomplished by dark. "The concept and planning were sound and thorough and the execution flawless."[10] Flak was moderate to intense but drop patterns were good and in such depth that all enemy artillery and rear defenses were destroyed on D-day.

The two divisions were assembled as fighting units in a matter of two hours or less. By nightfall 3500 prisoners, 2000 by the United States 17th Airborne Division, were taken from well prepared positions. The next day the two divisions were able to launch an attack eastward that continued for six days averaging seven miles per day until reaching their final objective of two defiles which were necessary so that the 2d United States Armored Division could break through onto the plains of Germany.[10.11].

This operation has been discussed without separating the American and British as both were tied in so closely together that their actions and degree of accomplishment were almost identical. "It is concluded that the airborne missions were successfully accomplished and materially aided the ground troops in crossing the Rhine with a minimum of loss".[10] Allied casualties were 15 to 20 percent (estimated).

12. Ground Operations.

a. At the conclusion of each airborne mission the airborne divisions have been given successive missions on the ground as if they were standard infantry divisions. In Sicily the 82d Division fought through to the completion of the campaign and then on into Italy. The 82d and 101st Divisions fought on into Normandy and were withdrawn only to prepare for the "MARKET" operation in Holland where they stayed approximately two months. In the battle of the Ardennes when the Germans broke into Belgium in the winter of 1944-45, the 82d, 101st and 17th Airborne Divisions were put into the line. After its operation across the Rhine the 17th Airborne Division stayed in combat until the end of the war, while the 82d and 101st Divisions were likewise being employed on the ground.[12]

b. As soon as it landed on the ground an airborne division became tactically like any infantry division. Airborne divisions were used offensively and defensively. Their ground missions were many and varied. They materially aided in the invasion of Normandy and the taking of the Cotentin Penisula, they played major roles in halting the German breakthrough in the vicinity of Bastogne, Belgium, they helped clean out the Ruhr pocket in the spring of 1945 and helped chase the German army to the Elbe at the end of the war.[12]

c. The fighting qualities of the airborne soldier have proven to be of the highest order and the best, but as a unit the airborne division has worked under several handicaps which limited the missions to which it could be assigned with expectation of complete success. It has very little transportation and is in effect a foot division once on the ground, its artillery is light and engineer construction equipment is practically nil. Higher headquarters have always had to attach many extra units to the airborne division in order that it might keep up with the others. (See Appendix 4.) As these troops were strange to the division and because in their training days the divisions had had no such troops to work with, the results obtained by attaching extra troops to an airborne division were not as good as they would have been had these troops been organically a part of the division. Moreover, the required supporting units were not provided for on the troop basis and had to be stolen, so to say, from other

units. The airborne divisions, however, have never faltered or failed and have played an important part in the winning of the war.

SECTION 3

PRESENT ORGANIZATION OF THE AIRBORNE DIVISION

13. General. Initially in World War II the table of organization for the airborne division called for one organic parachute infantry regiment and two glider regiments of infantry. It also provided one parachute field artillery battalion and two glider field artillery battalions, together with other supporting arms and services in proper proportion. Combat experience caused this organization to be changed so that there were two regiments of parachute infantry and one glider infantry regiment.[13] At the same time an additional parachute field artillery battalion was added. This organization, the one in operation at the close of the war, gave the airborne division three infantry regiments, two parachute and one glider, and four field artillery battalions, two parachute and two glider.

14. Comparison of Airborne and Infantry Divisions. The chart shown in Appendix 5 gives a general picture of the organization of the airborne division as of 8 May 1945, shows its strength, and compares that strength with that of the contemporary standard infantry division. It will be noted that the airborne division closely resembles the standard division in basic organization except that it contains organically a parachute maintenance company and an antiaircraft battalion. The strength of the parachute and glider infantry regiments, however, is less than that of the standard infantry regiment by, in round numbers 1000 and 300 men respectively.

15. Effectiveness in Airborne Operation. Basically the organization of the airborne division was sufficiently flexible and adaptable for airborne operations in the European Theater. Two of the four airborne divisions in the European Theater used an additional parachute regiment to strengthen the initial landing. The antiaircraft battalion was not employed as a unit and detachments from it were seldom used as antiaircraft when attached to regiments. The need for this unit is open to question as air superiority is a prerequisite for the undertaking of an airborne operation and local air superiority is required if a constant stream of airborne supplies is to be maintained to an airhead deep in hostile territory.[14] The artillery provided by Table of Organization 71-T was good but additions should be provided if the infantry is to be given proper artillery support.[14,15]

16. Effectiveness in Ground Operation. It was when the airborne division was in action as an infantry division on the ground that its inadequacy was most strongly felt. The insufficient personnel, the lack of heavy transportation, and the limitation of its weapons, then placed an extremely heavy burden on the airborne division.[14,15] This weakness was overcome by the character of its personnel, by augmentation of its transport, and by attachment of other units. It should be particularly noted that these

augmentations had to be made at the expense of existing ground units. (See Appendix 4.)

SECTION 4

EQUIPMENT

PRESENT EQUIPMENT OF THE AIRBORNE DIVISION

17. The functioning of the pre-VE Day airborne division depended as much on its equipment as on its organization. Some knowledge of the former must be had if proper conclusions are to be drawn from past operations on which to base the development of the airborne division of the future.

18. Individual Equipment. Generally speaking, the individual was armed and equipped as any other soldier. He had some special articles of clothing necessary to his specialized work. These proved quite satisfactory generally. Two weapons were usually carried by each individual thereby increasing individual firepower. The second weapon, usually a pistol, was not, however, in the tables of organization, but was obtained as a necessary extra.13,14,15.

19. Organization Equipment. In organizational equipment, the airborne division was not comparable to the standard infantry division.

a. Transportation. The division had only 230 two and one-half ton trucks (over half of which were in division headquarters and special troops) and 749 one-quarter ton trucks. The light trucks were necessary in an airborne operation as they were the only type which could be brought in by air. They could, however, carry very little of the division and its equipment. The two and one-half ton trucks were capable of transporting only the kitchens and some headquarters equipment. If the division had to move about on the ground it either went on foot or obtained transportation from a higher headquarters.

b. Infantry Weapons. The infantry was armed with pistols, carbines, rifles, automatic rifles, 60 and 81mm mortars, .30 and .50 calibre machine guns and the 57mm anti-tank gun.

c. Artillery. The division was light on artillery having 48 75mm pack howitzers and 12 105mm M3 howitzers. There was no cannon company in the infantry regiments.13

d. Engineers. The division had four two and one-half ton dump trucks, one air compressor and three tractors, crawler DBHP 20, with which to do engineer construction work. The above tractors are light weight airborne equipment and are not very effective. For stream crossings it had 24 five man pneumatic reconnaissance boats.13

e. Radios. The infantry was equipped with SCR 300's and 536's (three to five mile and one and one-half mile ranges respectively), the artillery with SCR 609's and 610's (five mile range). The division command net was comprised of SCR 694's and 284's (maximum continuous wave range thirty miles). Division headquarters had SCR 300's and 610's for inter staff

nets and SCR 193's, 499's and 542's (maximum ranges 60, 250, and 130 miles respectively) for communication with higher headquarters.

f. Comparative equipment table. (Airborne and standard division equipment)

COMPARATIVE EQUIPMENT CHART

STANDARD DIVISION 1944			STANDARD DIVISION		
AIRBORNE DIVISION 1944			AIRBORNE DIVISION		
Airplane, liaison	10	10	Rifle, cal. .30, M1C	81	81
Boat, assault	0	14	Tractor, medium, M5	0	18
Boat, reconnaissance	24	15	Trailer, ammunition, M10	6	57
Compressor, air, truck mounted	0	4	Trailer, ammunition, M21	0	6
Semitrailer, low bed, 20-ton	0	3	Trailer, ½-ton	515	299
Shop equipment, motorized general purpose	0	1	Trailer, 1-ton	242	241
			Trailer, 1-ton, 250-gal, water tank	0	5
Tractor, diesel engine driven 55 to 65 DBHP	0	3	Truck, 1/4-ton	749	649
			Truck, 3/4-ton, ambulance, KD	16	30
Trailer, utility, 2½-ton, type 1	0	10	Truck, 3/4-ton, weapons carrier	31	208
Water supply equipment, engineer	2	4	Truck, 1½-ton, cargo	24	104
Welding equipment, trailer mounted	0	1	Truck, 2½-ton, cargo	230	276
Car, armored, light, M8, w/armament	0	13	Truck, 2½-ton, cargo, SWB	0	81
Car, armored, utility, M20 w/o armament	0	1	Truck, 2½-ton, dump	4	27
			Truck, 2½-ton, signal corps, repair	0	2
Car, 5-passenger, medium, sedan	1	1	Truck, 2½-ton, small arms repair	2	1
Carbine, cal .30	4,903	5,100	Truck, 4-ton, wrecker	1	4
Car, half-track, w/o armament	0	5	Truck, wrecking, heavy	0	1
Gun, 57-mm	50	57	Truck, 6-ton, prime mover	0	3
Gun, machine, cal .30, heavy flexible	24	90	Trailer, K-52	0	1
			Parachutes (20% over)	15,417	0
Gun, machine, cal .30, light flexible	260	121	Carts	221	0
			Scooter	242	0
Gun, machine, HB, cal .50 flexible	165	237	Motorcycle	14	0
			Trailer, ½-ton, dump	12	0
Gun, submachine, cal .45	383	295	Radio, 609, 610, 619	144	120
Howitzer, 105-mm	(M-3) 12	54	Radio, 694 or 284	49	46
Howitzer, 155-mm	0	12	Radio, 300 or 511	155	126
Howitzer, 75-mm	48	0	Radio, 536	280	268
Launcher, rocket, 2.36-inch	612	558	Radio, 193	11	29
Mortar, 60-mm	81	90	Radio, 499	3	0
Mortar, 81-mm	42	54	Radio, 542	3	0
Pistol, automatic, cal .45	763	1,228	Radio, 608	2	28
Rifle, automatic, cal .30	300	405	Radio, 506	0	2
Rifle, cal .30, M1	6,169	6,268	Radio, 399	0	1

20. Special Airborne and Air Force Equipment.

a. The division had three general types of parachutes, standard personnel, reserve and cargo parachutes, aerial delivery containers of several types and maintenance equipment.

b. Pathfinder equipment was another important special item. Although used only to a limited extent in past operations and still in a state of experimentation and change, this equipment can do much to insure the arrival of the planes over their proper drop zones, and can be of material aid in assembling troops after initial landing. It will assume a more and more vital role in the future.

21. Organic Lack of Equipment. It will be noted that the overall firepower of the airborne division did not compare with that of the standard infantry division. This coupled with its lack of transportation was a prime factor in its inability to sustain itself for more than two or three days without support. Cognizance should be taken of the fact that in each operation airborne units were kept in the line for periods far in excess of the time which current War Department doctrine contemplated and that the necessary attached supporting troops were always provided at the expense of other divisions. (See Appendix 4.)

SECTION 5

TACTICAL EMPLOYMENT OF THE PRESENT AIRBORNE DIVISION

22. Examination of the tactical employment of airborne divisions during the recent hostilities concludes this chapter. The use of their organization and equipment in accomplishing the missions given such divisions in World War II may best be understood by consideration of the "what, when, where, and how" of their employment.

23. "What." The high command told the division what to do. All but one of our past airborne operations have been the vertical envelopment of an obstacle which was impeding the progress of ground forces.[1,11] In three of these, Sicily, Normandy and Southern France the ocean was the obstacle and in one the Rhine River. In the Holland operation the idea was to seize enemy territory from a disorganized enemy already in retreat so as to further demoralize and disorganize him[8,9] and also to secure a bridgehead across the Rhine River outflanking the Siegfried Line.

24. "When." The high command's decision as to when the airborne division should attack was dependent on the time required for operational planning and on considerations of deception and weather.

"When means not only the date but whether day or night. Of our five major airborne operations, the first two, Sicily and Normandy, were at night and the troops were badly scattered.[1,5]

The last three, Southern France, Holland and Rhine River crossings were daylight assaults. In the day operations the troops were dropped on or near their drop zones, were able to assemble, get on with their work and in all aspects the operations were more successful.[1,11] At night there is little danger from flak, however, in Normandy that little flak helped scatter the planes.[3,5] In Holland and the Rhine River operation flak was light to heavy yet, because the pilots could see, because of help from strafing planes, because smoke was used (Rhine only), and because men, once on the ground, could quickly silence them - the damage done by flak batteries did not seriously affect the results of the operation.[10,11] The risks of night operation had to be carefully weighed against its deceptive possibility.

b. Weather, too, played an important role. In Sicily planes were blown off their courses and lost. In Normandy fog scattered and lost planes and gliders. The bad weather following D-day complicated resupply and support from the sea. In Southern France the weather was good, except for fog on the initial drop, and so was the operation. In Holland the weather turned bad after D-day before all the airborne troopers were in and the effects of the weather were a serious handicap. In the Rhine operations the weather was good and so was the operation. In brief, the success of the airborne operation depends to a great extent on the planners having access to accurate meteorological data.

25. "Where." Where, generally, the airborne division should operate was decided by the high command when it selected the mission for the airborne unit. Where, specifically, within the general area was determined by the airborne unit commander in conjunction with the troop carrier commander. The following factors were given prime consideration in picking the specific drop and landing zones; presence or absence of nearby known enemy installations; ease of identity of the spot from the air; closeness to objective; nearness to cover, and facility with which elements could be assembled.

26. "How." a. The Principle of Mass. The importance of the principle of mass was recognized early in airborne operations. In Sicily where the airborne plan was superimposed upon an already existing plan, only a reinforced regimental combat team was used. In Normandy, however, two divisions were used; in Southern France a force comparable to a division; in Holland three divisions, two American and one British. Of the latter, however, only about one-half of each division was brought in D-day and bad weather kept the remainder from coming in on time. In the Rhine crossing two divisions took part. Of these, all the airborne elements were in the air at once, landing in less than three hours. It can be seen that in the later and most successful operations airborne forces were employed in strength.

b. Security. Because of long range planning and because of the number of people involved, security presented a serious problem. Within the division, "war rooms" were set up under 24 hour guard, inside and out - this all within guarded inclosures. All planning was done within these rooms. Prior to the movement to airfields, the briefing went only to the

level of platoon leaders. At the marshalling areas, where the entire division personnel was restricted under guard, all others were briefed in great detail. No effort was spared to prevent leakage of information and at the same time dissemination of details was complete.

c. Training and Equipment. Under this heading specialized training and equipping for a particular operation is discussed. As soon as the division commander was informed that he was to go on a mission he started planning with his staff and unit commanders. They examined the problem from all angles and new and/or special equipment needed was studied and steps taken to procure it. For a night operation special assembly aids were needed and special weapons had to be obtained. Each unit within the division was allotted its share of the job to be done. Combat teams were formed, or reformed, and the unit commanders commenced the training of these teams, stressing those things which were the most important for the coming job. Squads, platoons, companies and batteries which were to fight together started working together. Then, if time permitted, the division had a full scale dress rehearsal on ground as closely approximating the terrain of the coming battlefield as possible.

d. Intelligence. From the moment an operation was conceived until it was finally carried through or discarded, enemy information was received, evaluated, and disseminated. At the division level, the G-2 section scrutinized endless reports and hundreds of photographs. Contour, relief, communication, hydrographic and "Go" maps were made, reproduced, and distributed. Daily changes were plotted and delivered to units. This work was continuous and kept up until within a few hours of take off.

e. Detailed Planning. Within the divisional units plans were made in great detail and everyone was oriented in every phase of a coming operation. Each man had not only to know his own job but he also had to have a clear picture of the entire situation. This was necessary as many leaders were sure to become casualties and whoever took over must know perfectly the job he was undertaking. Since limited objectives were always assigned the airborne troops no detail was so small as not to be considered in the plans to take and hold these objectives. The location of each squad, crew served weapon, and command post was picked for the offensive and defensive phases of the action long before take off time.

f. Coordination at Division Level. Control and coordination of all forces taking part in an airborne operation are vital to the success of the planned action. At division level the closest coordination had to, and did, exist between the airborne and troop carrier forces. This coordination went down to the jumpmaster and his pilot. In addition, detailed arrangements had to be made with the Air Force for the security, messing and quartering of airborne troops at take off fields. The Air Force had, also, to provide facilities for the briefing of all members of the airborne division in the forthcoming operation - a briefing which all the pilots attended. In turn, oppor-

tunity was given airborne leaders to attend the Air Force's briefing of its pilots. Every effort was made to acquaint all members of the combined forces with every detail essential to success.

g. Tactics within the Division. In general, the tactics of the airborne division were essentially the same as those of the standard infantry division. Combat teams were formed of infantry, artillery, engineers, and medical personnel. Once on the ground these troops were assembled and employed to take their objectives as any other combat team would do. Command posts were set up, communications were established and maintained, supplies collected and distributed, and prisoners and wounded evacuated. Speed and surprise were the keynote of all plans. Once the objectives were taken defensive positions were dug, heavy weapons emplaced and camouflaged, artillery moved up, and final protective lines plotted. The two paramount factors in the tactical development outlined above were the successful landing of the jump or drop on the picked area and thereafter the assembly of the scattered team members.

h. Pathfinders. Pathfinders, a troop element conceived and employed for the first time during the latter stages of World War II, were organized for the specific purpose of insuring the arrival of carrier planes and gliders over the proper drop and landing zones and the speedy assembly of the scattered troopers after landing. These pathfinders were selected from specialists within the division and trained to use and equipped with the most recently developed homing devices. They were well briefed and dropped from ten minutes to several hours ahead of the arrival of the combat teams over their locations. Their work was important, especially in night operations.

i. Tactical Missions. The tactical missions given the airborne division in World War II have already been discussed in Section 2, supra, and will not be considered again here.

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15. Statements of airborne division general officers to General Board Questionnaire.

CHAPTER 2

OPINION OF SENIOR COMMANDERS

SECTION 1

IMPORTANCE OF EXPERIENCED OPINION

27. Consideration of the mission, organization, equipment, and tactical employment is not enough if a study of the present airborne division is to be a complete one. No decision as to its worth or use can be reached without consulting the opinions of higher commanders who have had occasion to work with or in such units during World War II. The impressions of the senior officers listed below must be considered of primary importance in making a study of airborne troops and their employment:

General	Omar N. Bradley, 12th Army Group Commander
General	George S. Patton, Jr., Fifteenth Army Commander
Lieutenant General	Wade H. Haislip, Seventh Army Commander
Lieutenant General	L. H. Brereton, First Allied Airborne Army Commander
Lieutenant General	John K. Cannon, Commander, United States Strategic Air Force in Europe
Major General	Floyd L. Parks, Former Chief of Staff, First Allied Airborne Army
Major General	E. G. Chapman, 13th Airborne Division Commander
Major General	William M. Miley, 17th Airborne Division Commander
Major General	James M. Gavin, 82d Airborne Division Commander
Major General	Maxwell D. Taylor, 101st Airborne Division Commander
Major General	A. C. McAuliffe, Former 101st Airborne Division Deputy Commander
Major General	Hugh J. Gaffey, XXIII Corps Commander
Major General	J. M. Devine, XXII Corps Commander

SECTION 2

STATEMENTS OF EXPERIENCED COMMANDERS

28. The thoughts of these senior commanders on the airborne division and its operation are expressed in the quoted statements which follow:

a. Opinion of the 12th Army Group Commander.

General Omar N. Bradley, in a letter to Commanding General, United States Forces, European Theater, (Rear), APO 887, United States Army, dated 25 July 1945, (see Appendix 6 for entire letter) makes the following statements:

"It may be that with the development of recoilless weapons, an airborne operation in the future may be able to defend itself against armored attacks without being reinforced overland by heavier anti-tank weapons. However, in any operation where the outcome is not so apparent as it was in the later stages of our operation, I believe that the conditions for airborne operations will be about as stated above; that is, at points where the forces can be reached by ground action within a reasonable time.

"In my opinion, airborne operations back of Utah Beach, where there was a water hazard behind the beach, were essential for the success of the attack. I also feel that had the Rhine River been defended strongly it would have been highly desirable to use airborne troops in the assault crossing."

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"I believe that the future primary role of the airborne troops will be similar to the role played in this operation; that is, to assist in the assault of prepared positions, particularly where a landing has to be made."

b. Opinion of the Fifteenth United States Army Commander.

General George S. Patton, Jr., made the following remarks, in substance, when interviewed by a member of the General Board on 6 November 1945:

For the present the largest unit of airborne troops should be the combat team. The current airborne division does not possess adequate heavy weapons to sustain itself in battle except for short periods. Airborne divisions committed to ground operations during World War II had to be reinforced with equipment at the expense of other divisions and corps. Any unit based on improvisation is not good. If the Third Army, Seventh Army or II Corps had possessed a force of airborne troops immediately available for use, on numerous occasions most remarkable results could have been obtained by using them in conjunction with ground forces. By 'immediate availability' I mean that a drop could be made in a specified place in a minimum of 24 hours' notice. It is believed that it is not difficult to foresee that in the future, initial landings on hostile shores may well be made entirely by air with heavy equipment and armor landing from boats after the beaches have been secured. We must not limit our imaginations to the present possibilities; we must look to the future where improvement in equipment and technique may well make it possible to drop large airborne units on short notice. It is felt, therefore, that one active airborne division should be retained in the army in peacetime. This division should be under Ground Force control and not under the Air Forces. In the immediate future the primary role of airborne forces in combat must be the close-in vertical envelopment of enemy ground forces. When complete supply by air is practicable deeper penetrations may be made by airborne forces into enemy territory.

c. Opinion of the Seventh United States Army Commander.

Lieutenant General Wade H. Haislip, in a letter to Commanding General, United States Forces, European Theater, dated 28 July 1945, (see Appendix 10 for entire letter) makes the following statements:

"In a relatively modest Regular Army, it is believed that the Airborne Division should still be maintained in order that new techniques, experimental changes in T/O, and employment as a division in maneuvers may be carried out for the benefit of the Army as a whole, and to provide a sound basis for further development of the airborne arm, in the event of a future war. On the other hand, it is recommended that all divisions be trained in glider borne and air landing operations, particularly the latter. Separate parachute regiments and aerial resupply companies should be maintained.

"Sufficient troop carrier groups to lift a maximum of three airborne divisions should be maintained. This would insure that an operation of two division strength could be mounted, with an adequate reserve to maintain it."

d. Opinion of the Commanding General, First Allied Airborne Army.

Lieutenant General L. H. Brereton, in a letter AG 319.1 Gen (FAAAC), to the Supreme Commander, Allied Expeditionary Force (Main), dated 22 December 1944, makes the following statements:

"The principle of MASS was demonstrated on this operation. Future planning should provide for a lift sufficient to drop two airborne divisions initially to exploit fully the surprise achieved. Dependence on a secondary lift to accomplish the objective will invite serious consequences."

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"The enemy is conducting operations on interior lines over an effective transportation net. He has the ability to reinforce any threatened area quickly. Therefore, it is vital that the airborne thrust be joined with the ground thrust in a minimum of time to avoid undue losses. The armament of airborne troops does not permit sustained operations against a prolonged attack by heavy weapons and armored forces."

e. Opinion of the Commanding General, United States Strategic Air Forces in Europe.

Lieutenant General John K. Cannon, in a letter to Commanding General, United States Forces, European Theater, dated 15 August 1945, (see Appendix 11 for entire letter) makes the following statement:

"If it is an accepted principle that airborne units should be made up of specialized troops, it seems unlikely that troops could be trained to a proper level of shock-troop efficiency unless their training is concentrated almost exclusively on matters dealing with airborne employment. Naturally, the training (and consequent availability) of all ground troops in airborne operations would be desirable but it is felt that the practical considerations involved may preclude such training. It would seem that troops primarily trained and equipped for airborne employment could acquire considerable finesse in the technique of purely ground units whereas the reverse would not necessarily apply. Every effort should be made, however, to study the feasibility of giving all troops a rudimentary course of training in airborne technique."

f. Opinion of the former Chief of Staff, First Allied Airborne Army.

Major General Floyd L. Parks, in a letter to Commanding General, United States Forces, European Theater, dated 1 August 1945, makes the following statements:

"I do not believe it possible to train all divisions in airborne technique and operations. I believe that there should be airborne divisions, as such, and that as many standard infantry divisions as possible should be trained in air landing roles."

* * * * * * *

"It seems important to me that in order to retain our present superiority in the airborne field we must maintain both airborne troops and troop carrier lift under a headquarters combining both elements in its staff which would insure training, research and development of airborne training and equipment. No phase of airborne matters should be neglected and constant research should be carried on vigorously."

g. Opinion of the Commanding General, 13th Airborne Division.

Major General E. G. Chapman, in a letter to the Chief of Staff, United States Army, makes the following statements:

"Premised on the belief that subsequent hostilities in which the United States may become involved, will occur so rapidly as to preclude a long interval of time in which to make preparation, it is believed that the post-war role of airborne forces should include such an organization as will permit the immediate and rapid employment of airborne forces on either a tactical or a strategic mission.

"Based on the proposition submitted * * * above, it is believed that the organization and number of airborne troops should not be contingent upon the number of standard infantry divisions but rather upon the contemplated employment of airborne

divisions in event of an emergency and the outbreak of hostilities. I am of the opinion that a minimum of three airborne divisions should be provided for. These divisions in the post-war military establishment would be stationed, one on the East coast, one on the West coast, and one in Central Western United States where it might be employed either to the north or to the south. I believe these divisions should be utilized for training and providing cadres for units of the Regular Army, Organized Reserve, and National Guard. They should, however, be retained as a tactical command and capable of employment in event of emergency.

"It is not believed practicable or desirable, even in a relatively modest Regular Army to train all divisions in airborne technique and operation. The personnel of certain designated divisions only should be specially trained as parachute-glider soldiers. All Regular Army units should, however, be trained in air landing (transport by plane) procedures as contrasted with specialized parachute and glider technique. Experience has indicated that all members of a regular organized combat unit will neither desire, voluntarily participate, or physically and mentally qualify for airborne purposes."

h. Opinion of the Commanding General, 17th Airborne Division.

Major General William M. Miley, in a letter to The Adjutant General, War Department, Washington 25, D.C., dated 23 July 1945, makes the following statements:

"I feel that in our peace time Army the role of Airborne Divisions should be purely strategic. The existence of Airborne Divisions and the possibility of their rapid movement to any theater will be a strong strategic weapon. The presence of Airborne troops in our Army could well enable the reduction of its overall strength."

* * * * * * *

"With the present equipment and organization, which requires the bulk of the Divisions to be parachutists, it is neither practicable nor desirable for all divisions to be trained as Airborne Divisions. However, if improvement in means of landing Airborne personnel (such as landing them in autogyros) does away with the need of lengthy training and the likelihood of men refusing to jump, then it would be practicable and desirable. In any event, it is definitely believed well to train all divisions in air landing operations. I do not feel the retention of parachute regiments should effect this decision."

i. Opinion of the Commanding General, 82d Airborne Division.

Major General James M. Gavin, in his answer to the General Board Questionnaire makes the following statements:

"The airborne division should be organized with three identical regiments capable of commitment as glider or parachute infantry.

"Missions presently assigned should remain unaltered. The current War Department doctrine * * * *is considered sound based upon the four combat airborne operations of this division."

* * * * * * *

"It is the general opinion of all commanders of this Division that an airborne unit, since it is almost always required to fight in sustained combat after executing its airborne mission, should have the same T/E as the corresponding unit of a straight infantry division plus certain airborne equipment. All infantry equipment which is not air-transportable will arrive overland."

j. Opinion of the Commanding General, 101st Airborne Division.

Major General Maxwell D. Taylor, in a letter to the Commanding General, II Corps, dated 25 July 1945, makes the following statements:

"The future primary role of Airborne troops is likely to be both strategic and tactical. At the outset of hostilities, before the formation of continuous fronts and the creation of flak barriers, Airborne troops utilizing surprise and immediate air superiority can range deeply into enemy territory and effect decisive strategic results. As the fronts crystallize along with antiaircraft and antiairborne defenses, the range of Airborne troops is likely to diminish. Then their mass employment will become largely tactical in nature resembling that in Normandy and on the Rhine where the ground forces called in the Airborne troops for the rupture of a strong enemy position. Furthermore, Airborne troops should be able to meet a requirement for small scale parachute operations in the immediate battle area such as the seizure of bridges or the closing of a defile."

* * * * * * *

"In planning the Airborne army of the future, it must be borne in mind that our Airborne operations to date have been essentially parachute operations. Parachute troops can be and have been put down successfully in almost any kind of terrain both in daylight and in darkness. Glider and air landing operations are severely restricted by terrain, enemy ground defenses and conditions of light. Unitl some new technique is developed that can give a wider applicability to glider operations, the Airborne division must remain essentially parachute with gliders available for use under favorable circumstances. The maintenance of a large number of separate para-regiments is not a satisfactory solution. A parachute unit needs the supervision of a

Division Headquarters and the effective use of parachute troops in battle requires the coordinated employment of all arms welded together in a Division team."

* * * * * * *

"Airborne problems are often considered as something special, requiring a radically new approach. Actually, an Airborne operation is merely an amphibious landing with aircraft substituted for landing craft. The relation of Airborne troops to the Air Forces is exactly that of the amphibious troops to the Navy. Generally speaking, those methods which have made for successful amphibious warfare can be applied directly to the airborne field. The Airborne division is not and should not be considered a special type division. It is merely an infantry division with something added; namely, ability to close with the enemy by air. Its basic organization and equipment should be that of an infantry division. It will differ from the latter only in having a supplementary table of equipment including light weapons and vehicles which are air transportable. Once on the ground, the Airborne division must be prepared for sustained employment. Experience has shown conclusively that a quick withdrawal of Airborne troops is never possible. Necessarily, they have been put down at a critical point where the battle will rage for days before any troops can be released. If the Airborne division is to perform its duty alongside standard infantry divisions it must bring up quickly standard equipment and weapons."

General Taylor, states further, in a letter to the Commanding General, XVI Corps, APO 197, United States Army, (See Appendix 8 for entire letter) dated 10 August 1945:

"Basic Recommendation. The airborne division should be organized exactly the same as the infantry division insofar as tables of organization and equipment are concerned with the following variations:

a. All personnel of the airborne division should meet the standards set for parachute troops and should all be trained to enter combat by parachute, glider and air - transport.

b. The tables of equipment should be drawn to permit the substitution of certain items of light equipment in advance of an airborne operation when the standard items of the infantry division are not air-transportable."

k. Opinion of the former Deputy Commander, 101st Airborne Division.

Major General A. C. McAuliffe, in a letter to the Commanding General, XX Corps, dated 23 July 1945, makes the following statements:

"I conceive the future primary role of airborne troops to be still that of assisting the main assault force by the

seizure of key terrain features, the disruption of enemy communications and the neutralization of important enemy defenses.

"Airborne divisions, properly organized and equipped, can perform equally with infantry divisions. * * * *"

l. Opinion of the XXIII United States Corps Commander.

Major General Hugh J. Gaffey, in a letter to Commanding General, Seventh United States Army, dated 25 July 1945, makes the following statements:

"I conceive the future primary role of airborne troops to be the seizure of vital tactical features in critical operations essential to the strategic plan.

"I consider a reasonable proportion between specialized airborne divisions and standard infantry divisions to be one airborne division per field army.

"In the Regular Army all divisions should be trained in airborne operations and technique. Certain divisions, in the proportion expressed above, should receive additional specialized training and equipment for airborne operations. This view would hold even if separate specialized units such as parachute regiments were maintained."

m. Opinion of the XXII United States Corps Commander.

Major General J. M. Devine, in a letter to the Commanding General, Third United States Army, dated 24 July 1945, makes the following statements:

"I feel strongly that to justify the retention of powerful airborne forces we must envision their employment in an essentially strategic role. I refer to an operation of at least the same magnitude that characterized the German capture of Crete: an initial assault by paratroops and glider troops backed up and reinforced by strong balanced formations transported to landing fields in the assault area in transport planes, the whole force being supplied for days by air. Such an operation may well have been feasible during April 1945 in Europe after the reduction of the Rhine barrier. In future wars we shall always have occasion to employ airborne elements in a tactical role. Basically capitalizing on the overwhelming air superiority the United States now enjoys and should maintain, any attack plans we may develop should give due consideration to powerful airborne offensives."

* * * * * * *

"I do not consider it practicable or desirable to provide jump or glider training for the personnel of all divisions of the Regular Army. The esprit de corps inherent within and the caliber of airborne divisions can be in large measure attributed to the fact that they are volunteer organizations. The

proposed peace-time Army will include many men who are either physically unqualified or mentally unreceptive to jump or glider training or both. Mandatory airborne training with this class of personnel might well have a deletrious effect on the morale of the Army. A better solution would be to segregate volunteers in airborne divisions."

* * * * * * *

"In answer to the second question propounded, it is not considered advisable to maintain parachute regiments as differentiated from airborne divisions. The smallest airborne unit should be the division for the reason that a division is the smallest self-sustaining unit. The maintenance of parachute regiments only would envision the relegation of airborne forces to a completely subordinate role for use in minor operations only."

CHAPTER 3

CONCLUSIONS AND RECOMMENDATIONS

SECTION 1

FINDINGS AS TO THE RETENTION OF THE AIRBORNE DIVISION

29. Alternatives to the Airborne Division. In considering the further development of our army with respect to airborne operations, it is desirable to review possible alternatives to the airborne division. In order to make provision for airborne combat, three organizational solutions present themselves on the division level:

a. A standard, air-transported infantry division; or

b. A standard, air-transported infantry division, reinforced by one or more small parachute units; or

c. An integrated airborne division, specially trained, equipped, and staffed for airborne operations.

30. The Alternative of a Standard, Air-Transported Division. To state this alternative is in itself almost enough to reject it. Suitable fields are required for the landing of the air transports necessary to carry an infantry division. The enemy presumably will defend, actively and passively, such fields. If disaster is not to be invited, it will be necessary to employ parachute forces to overcome the enemy defenses, as well as to seize, secure, and possibly prepare the landing areas before air transports can be successfully landed. However, it is not likely that an adequate number of parachutists could be recruited and trained within the standard division.[1] The inherent reluctance of most men to jump from an airplane precludes the effective use of any but volunteers as parachute troops. Moreover, the relatively few volunteers must be screened for the required combination of physical and mental stamina, as well as hardened by long, highly specialized, training. Problems of equipment further emphasize the impracticality of integrating parachutists into a standard division. To be sure, in exceptional circumstances, as when the enemy is known to be defenseless or in a state of disintegration, it is conceivable that a standard division might be moved into hostile territory without the support of parachutists. For such a contingency, and also for the purpose of air movement in a non-combat zone, it is desirable to train standard infantry divisions in air transport techniques. But a standard division, unsupported by parachutists, cannot be considered capable of performing an airborne combat mission.

31. The Alternative of a Standard Division Reinforced by Parachute Units. A more reasonable possibility is that a standard, air-transported infantry division, reinforced by specially trained and equipped parachutists, could be an effective substitute for an airborne division. Such an alternative, if feasible, would

have several advantages. By obviating the training and equipment peculiar to the airborne division, it would tend to simplify the structure of our army on the division level. Eliminating one type of special-purpose division, it would make for more efficient employment of man-power. Detailed consideration of the problem, however, indicates that this proposal does not offer a real alternative to the airborne division. The reason is simply, that to be effective, the reinforcement of a standard division in an airborne operation must consist of a comparatively large number of specialized troops of the combined arms.[2] The seizure and retention of an airhead requires a force sufficient in troops to hold a relatively large area, strong enough in weapons of the several arms to overcome heavy opposition, adequately trained so that its elements constitute a team, properly staffed to care for the multitudinous details of planning the operation, and capable of sustaining itself independently for a limited period of time. In short, the necessary reinforcement must itself be an airborne division. It is desirable to review the considerations that lead to this conclusion.

32. Required Strength in Personnel and Weapons. The seizure and holding of an air-head requires a force much larger than a parachute regiment, even if it be reinforced.[3] An airfield sufficiently large to land modern transport planes - or the larger gliders - is at least a mile long. This area must be protected from the direct fire of small arms and, so far as practical, from artillery fire. To accomplish this, hostile infantry and artillery must be destroyed or driven beyond the range of the landing zone. At the very least, ground observation must be denied the enemy. Even assuming that our air force has complete superiority, the dropped parachute unit must control a minimum perimeter of 18 miles, far too large an area to be covered by the personnel of a regiment. Furthermore, a parachute unit of regimental size, unless heavily reinforced, would not have sufficient weapons with which to secure the area described above.[4] The necessary reinforcement would increase the size of the original unit to about that of a division. However, even with personnel and weapons identical to those of a division, the reinforced parachute unit would not have the effective fire power of a division. Such a degree of effectiveness comes only after long combined training, only after each component has become familiar with all others with which it operates.

33. Required Training. The opportunity for team training is lacking when reinforcing units are attached to an organization only for a particular operation. This is especially evident as applied to airborne operations. Each element of a dropped force must be able, under the most adverse conditions, to assemble at its designated point so that it can properly play its part in accomplishing the team task. This requires the instinctive teamwork that only long association and training with the supporting and supported units can give. Such proficiency and familiarity do not come with transient association in a short, concentrated, training period. The requisite technical and combined training, moreover, can not be adequately conducted by the commander of a small parachute unit. Such training lies within the province of a division.

34. Supply and Maintenance in Combat. Ability to sustain itself for a limited period is an essential quality in an airborne organization. Such ability does not exist in a unit smaller than a division.[1] This is not a matter of numbers of fighting men or weapons, for these can be obtained by reinforcement. It is, rather, the ability of a unit to supply itself from the airhead for a limited period with an adequate store of ammunition, signal supplies, fuel, and food. It also must maintain in operating condition sufficient weapons, signal equipment, and, if they have been landed, vehicles. This requires a relatively large and highly skilled supply element, together with special troops such as are contained in the division. Makeshift improvisation, to which a small reinforced parachute organization would be limited, would not satisfactorily solve the supply and maintenance problems that each operation entails.

35. Staff Requirements. An airborne operation demands a large, specially trained, and versatile staff if the necessary coordination of air, ground, and possibly naval, forces is to be achieved. Again, long association in training is a prerequisite. The citing of a few of the essential staff duties suggests the scope and specialized nature of the planning and execution of an airborne operation. Once the target for an airborne operation has been selected, suitable drop zones and landing zones must be selected from air photos, maps, and terrain reliefs; pathfinder units must be organized and trained; and units must be provided with the special equipment and supplies required for the particular operation contemplated. Units must plan and rehearse the operation by means of tactical exercises and command post exercises. Similarly, airborne intelligence and personnel problems require special training and skill on the part of the staff. The procurement and maintenance of parachutes and other airborne equipment, as well as the provision of supplies by air, present unique supply problems. The logistics of moving troops to marshalling areas, of assignment to aircraft, and of transporting the troops to the target must be solved. Expert advice and assistance on other matters peculiar to an airborne operation - communications with air support and troop carrier units, medical care, engineer demolitions and construction of obstacles - are also required by the airborne unit commander. Moreover, coordination must be effected with friendly forces, ground, air, and naval, in the corridor of approach and in areas adjacent to the target. In this respect, the rank of division commander is a marked advantage in the necessary coordination of plans with high headquarters. Finally, the plans must be executed with great skill and energy. The limited staff of a small parachute unit is simply not adequate for such a task. Nor can the commander or the staff of the standard infantry division be expected to have the specialized knowledge, training, and experience necessary to meet these requirements.

36. Conclusion. It is therefore apparent that no alternative to the airborne division is acceptable. Other organizations lack the necessary combination of trained personnel and teamwork, the fire-power, the supply and maintenance facilities, and the command and staff available in the airborne division. If our army is to carry out its mission in the future, the airborne division must be retained.

SECTION 2

CONCLUSIONS AND RECOMMENDATIONS AS TO THE RETAINED AIRBORNE DIVISION

37. Basis for Conclusions and Recommendations. The conclusions herein as to organization, equipment, and tactical employment of the airborne division are based on the combat missions assigned airborne units and on the lessons learned in the European Theater while carrying out those missions. The recommendations are supported by the weight of the opinions of senior commanders under whose control airborne divisions functioned as well as of the opinions of officers who commanded airborne units in combat.

MISSIONS OF THE AIRBORNE DIVISION.

38. Recommendations as to Combat Mission. In combat the missions presently assigned by paragraph 996, Field Manual 100-5, Operations, 15 June 1945, and War Department Training Circular Number 113, 10 September 1943 are:

a. To seize, hold, or otherwise exploit important tactical localities in conjunction with, or pending the arrival of, other military or naval forces.

b. To attack the enemy rear and assist a breakthrough or landing by the main force.

c. To block or delay enemy reserves by capturing and holding critical terrain features, thereby isolating the main battlefield.

d. To capture enemy airfields.

e. To capture or destroy other vital enemy establishments, thereby paralyzing his system of command, communications, and supply.

f. To create diversions.

g. To assist the tactical air force in delaying a retreating enemy until the main forces can destroy him.

h. To reinforce threatened or surrounded units.

i. To seize islands or areas which are not strongly held and which the enemy cannot easily reinforce.

j. To create confusion and disorder among the hostile military and civil personnel.

k. As a constant threat by their mere presence in the theater of operations thereby causing the enemy to displace his forces over a wide area in order to protect vital installations.

Since a study of past airborne operations and of the comments of senior commanders, Chapter 2 supra, indicates no need for change in these it is recommended that the missions of the airborne division remain as stated above. (See General Gavin's statement in Chapter 2 supra and also Appendix 3 for opinions of combat commanders on this point.)

39. The organization, equipment, and tactics of the future airborne division must be such that it can perform the missions listed in paragraph 38 supra, with maximum efficiency and minimum attachment of supporting units.

ORGANIZATION OF THE AIRBORNE DIVISION.

40. Conclusions as to Organization. The organization of the present airborne division is such that supporting units invariably had to be attached (see Appendix 4). This was due to the fact that, contrary to War Department doctrine, the airborne division was not relieved from the line in two or three days but had to stay in action for considerable periods of time - sometimes for weeks. "Experience has proven," says Brigadier General Stuart Cutler, 101st Airborne Division Commander in answering the General Board's questionnaire, "that it was not possible for theater commanders to replace an airborne division after it had engaged in its initial operation due to the difficulty of diverting a relieving force through the usually crowded lines of communication and supply." This is a general opinion. The airborne division was not only kept in the line for long periods in the late war, but it can always expect to be so retained in action in the future. In the recently concluded conflict supporting organizations had to be provided it by higher headquarters at the expense of other units. (See statement to the General Board by General George S. Patton, Fifteenth Army Commander, in Chapter 2 supra.) The need for such attachments, as is shown in Chapter 1 supra, was caused by an organic lack of sufficient transportation, of sufficient artillery and anti-tank armament, and of inadequate engineer and medical service for sustained operations. If it is to have the power and endurance essential for the accomplishment of its mission, the airborne division should have the table of organization and equipment of the standard infantry division, with certain augmentations. This is borne out by the contents of Chapter 1, the statements in Chapter 2, and the gist of the opinions of experienced commanders.[5] The use of this table of organization would simplify the planning of the high command in that both the airborne and the standard divisions when in ground combat could be given identical missions and frontages. Furthermore, with the same organization, the latest developments in tactics, training and equipment would be applicable to both airborne and infantry divisions.

41. Conclusions as to Augmentation to Standard Division Organization. No large additions are necessary, fortunately, to make the infantry division table of organization satisfactory for use by the airborne division in performing its tactical role. It may be concluded that the necessary augmentations listed below would not increase the personnel now in the standard division by more than 410 officers and men.

a. The air section of the old division must be included in the new airborne organization.[6] Two air advisors, a lieutenant colonel and a major, part of the present airborne division staff should be made part of the new division staff. These are Air Force officers able to give expert advice to the division commander on all matters pertaining to the Air and Troop Carrier Forces. In view of the increased importance of air-ground liaison in an airborne unit the air-ground liaison section should be increased by one lieutenant colonel.

b. Three or four enlisted aerial phototopographers, although not on the present airborne staff, should be added to the G-2 Section. These are needed for the detailed air photo interpretation, the relief and photographic map making, and the data compilation necessary in the extremely comprehensive and detailed briefing required by everyone, from unit commander to private, in airborne operations.

c. The parachute maintenance company of the old table of organization must be made one of the special troops units in the new division.[6] It supplies and maintains all Air Force equipment in the division. This includes all parachutes, harnesses, aerial delivery containers, and the like. It also designs and manufactures special equipment for special operations.

d. A pathfinder company should also be added to the standard division table of organization.[7] It is an organization only now being conceived of, which has the mission of furnishing, training, and equipping the special pathfinder teams which are vital to the successful airborne operation. A projected table of organization originating with the 82d Airborne Division gives this company a strength of 11 officers and 141 men and an organization of one headquarters platoon and three pathfinder platoons. This the General Board feels to be a maximum.

e. The addition of three surgical teams to the medical battalion on the basis of one per infantry regiment, is felt to be necessary.[6] In the initial phases of an airborne operation, evacuation outside of the division area is impossible and there are always many wounded in need of immediate surgical attention if their lives are to be saved. These teams are small, consisting of a surgeon, assistant surgeon, and three helpers.

f. No More Parachute or Glider Units.[6] In the new organization, all parachute and glider units as such would be abandoned. The new units would use both parachute and glider: the former for personnel and light equipment; the latter for heavy equipment. It is the almost universal opinion of airborne commanders that airborne units should be organized and trained to land by parachute, glider, and air carrier, usually by some combination of the three.[6]

g. The future airborne division should be considered as being divided into two general echelons. The first, of course, would be the assault contingent. It would be comprised of the forward echelon of the staff and of all the combat and service elements which can be air transported to the landing zone in face of hostile resistance. The second would be the ground echelon. This

would have no set organization and would consist of the heavy armament, equipment, and motor transportation and that portion of the staff and service elements which cannot, with present air carriage, be landed with the fighting force by parachute or glider.

42. Recommendation as to the Organization of the New Airborne Division. It is recommended, on the basis of the requirements set forth above, and in accordance with the thought of some of the most experienced airborne and ground commanders (see Appendix 3), that the airborne division be given the same table of organization as has the standard infantry division, with certain augmentations. It is further recommended:

That the headquarters and units within the new organization have the same composition and purpose as in the infantry division.

That personnel making up the new unit be selected volunteers specially trained in parachute jumping and gliding.

That no unit be designated glider or parachute but that both glider and parachute be employed in all organizations, the one for heavy weapons and equipment and the other for individuals.

That augmentations, as far as organization is concerned, include:

The air advisers and air-ground liaison officers now in the present airborne division (Table of Organization and Equipment 71-1, dated 16 December 1944).

A small group of enlisted aerial phototopographers in the G-2 Section.

Three surgical teams in the medical battalion.

The parachute maintenance company now in the airborne division (Table of Organization and Equipment 71-27-T, 16 December 1944.)

A pathfinder company.

EQUIPMENT OF THE AIRBORNE DIVISION.

43. Conclusions as to Equipment. A study of operations reports indicates that the equipment of the present airborne division has not, in combat, proved sufficient either in amount or potency to permit it to fight unsupported even for a short time after the airborne phase of an operation.[8] Its biggest weakness was its lack of powerful enough artillery, anti-tank guns, engineer equipment, communications equipment, and of sufficient motor transportation (see chart on page 9 supra). Since ordnance and transport of sufficient power and in adequate number are organic to the standard division which has the same tactical problems it may be logically concluded that the new airborne division should have the same table of equipment as has the infantry division.

44. Conclusions as to Added Equipment. Since its mode of entry into combat is so different from that of the standard division certain supplemental equipment is necessary. These required items consist, in the main, of light, new, powerful weapons which may be dropped by parachute or crash landed in light gliders for use in the initial stage of airborne operations as substitutes for the standard medium and light artillery and anti-tank guns before the heavier equipment can be flown or glided in. It is the conclusion of the General Board, after due deliberation and a study of the statements made by experienced leaders - particularly of the detailed report from the Commanding General of the 101st Airborne Division (see Appendix 8) - that for every standard piece of ordnance in the airborne division there should be a light weight piece of generally corresponding purpose for use in combat before the heavy pieces can be brought up. It is further concluded by the General Board that other additions to the standard table of equipment must include extra small arms for parachutists, light engineer equipment for initial landings, additional communication equipment to cover heavy normal combat losses, parachutes and pertaining gear, ground assembly and pathfinder equipment, and the special clothing required by parachutists.[6]

45. Recommendations as to Equipment. Based on the conclusions above it is recommended that the future airborne division have the same equipment as the standard infantry division with the exceptions and additions listed below.

a. Individual.

(1) It is recommended that the issue of special clothing to airborne troops be continued.

(2) It is recommended that the airborne soldier be issued lace boots that fit snugly. The buckles on combat boots occasionally get entangled in the suspension lines of the parachute and they lack the snugness needed for ankle and arch support on landing.[6]

(3) It is recommended that all airborne troops be authorized a pistol as an additional weapon. This gives each individual two weapons, with the pistol for immediate defense on landing.

b. Infantry Weapons. It is recommended that, in addition to the pistol mentioned above, the automatic weapon fire of the infantry squad be increased by the addition of light automatic weapons for use on first landing in place of the normal heavy automatic weapons which will come in later (see Appendix 8).

c. Anti-tank Weapons. It is recommended that for each standard anti-tank gun a 75mm recoilless rifle (or later developed corresponding weapon such as the 3.5" rocket launcher) be added to the table of equipment of the new unit for use until the heavier standard model can be brought up (see Appendices 7, 8 and 9). Further, it is recommended, that such recoilless gun be incorporated in the division reconnaissance company and in the engineer battalion.

d. Artillery. It is recommended that the division artillery have dual artillery pieces, i.e., light weight weapons for the airborne phase of operation such as the 75mm mountain gun or the 105mm recoilless rifle for light and the 4.2" recoilless mortar for medium artillery. These would be replaced by their standard weapon when the ground follow-up elements arrive (see Appendix 8).

e. Engineer. It is recommended that in addition to the standard engineer equipment the battalion retain its present or future developed airborne equipment such as the light bulldozer and air compressor.[6]

f. Communication.

(1) It is recommended that the airborne division be authorized a 25% increase of all signal equipment to cover normal losses incident to an airborne operation.[6] All equipment must be rugged and light weight.

(2) It is further recommended that radios be developed for better communication between troops on the ground and aircraft coming in with additional troops and supplies, and for division to higher headquarters use. (The ideal characteristics for an inter-headquarters radio are a 400 mile range, capable of being mounted complete in a quarter-ton trailer for transportability, and with ten dial controlled channels on one beamed carrier wave for ease in use.)

g. Pathfinder. It is recommended that such pathfinder equipment as shall be developed from time to time be included in the new division (see Appendices 7,8 and 9).

h. Air Force. It is recommended that parachutes, harnesses, aerial delivery containers, tie down ropes and chains, and maintenance equipment be included in the airborne division table of equipment.

i. Ground assembly equipment is recommended to facilitate the assembly of squads, platoons, companies, and battalions by day and by night. Such equipment is needed immediately upon landing. Present aids are infra-red equipment, the "Lost Chord", (induction frequency transceiver and transmitter) and the SCR 536 with director antenna (see Appendix 7).

j. Miscellaneous. It is recommended that streamlined briefing aids such as photograph projectors, sketching equipment, relief map materials, and chart and map reproducers be included in the equipment of all units and companies of the airborne division.

46. Testing and Development. It is also recommended that the different agencies within the Ground Forces for the testing, developing, and procuring of airborne equipment, be consolidated and that the closest coordination between these agencies and the Air Forces' research and development laboratories exist (see Appendix 7). It

is fundamental that the Army Air Forces and airborne ground troops pool their ideas, have a common appreciation and understanding of their mutual requirements, pool their means and arrive at a mutually satisfactory solution to their requirements. It is in this field of test and development that the greatest potentialities of airborne development lie. Particularly is it true that the carrier, plane or glider, should be built to accommodate the weapon or equipment carried, not the reverse.

47. Ground Follow-up Element. The above conclusions and recommendations are based on the fact that the heavy impedimenta which cannot be dropped or landed in gliders initially will be brought up later in the ground follow-up element. (See statement of Commanding General, 82d Airborne Division in Chapter 2 supra.) With this ground element completely under the control of the commander, the airborne division can count on getting the support of its standard artillery, with a minimum of delay and without stripping other units of their ordnance and transportation. If present progress in carrier and glider design continues it is expected that the ground follow-up element will in the near future become part of the air echelon.

TACTICAL EMPLOYMENT OF THE AIRBORNE DIVISION.

48. Conclusions as to Primary and Secondary Roles. The General Board after mature thought and consideration of the opinion of senior commanders[9] concludes:

a. That the primary role of the airborne division is:

To seize, hold, or otherwise exploit important tactical localities in conjunction with or pending the arrival of other military or naval forces.

To attack the enemy rear and assist in a breakthrough or landing.

b. That any other role is secondary. (See list of missions in Paragraph 38 supra.)

c. It should be noted that after landing and being joined by its ground follow-up element, the airborne division carries out the mission of a normal infantry division acting alone or as part of a corps, until the airborne division can be withdrawn.

49. Conclusions and Recommendations as to Current War Department Doctrine. a. The tactical doctrine for the employment of airborne forces as enunciated in War Department Circular 113, 9 October 1943, is concluded to be essentially sound and comprehensive. The experience of many seasoned battle leaders, however, indicates the necessity for a change in the idea that airborne troops must be withdrawn or supported within three days of commitment. General Maxwell D. Taylor, former 101st Airborne Division Commander, whose thought is representative, says, "This conception has proved not valid in battle experience in Europe. x x x x x The division was never withdrawn quickly as it was always committed in a critical situation which did not permit the relief of combat troops regardless of previously announced intentions." (See Appendix 8.) It is, therefore, proposed that paragraph 3 d of the circular be amended to read as follows: (words lined out are to be omitted, words capitalized are added.)

"Airborne troops should not be employed unless they can be ~~supported~~ JOINED by ~~other ground (or naval) forces within approximately~~ THEIR GROUND ELEMENTS WITHIN THREE TO FIVE ~~three~~ days, ~~or unless they can be withdrawn after their mission has been accomplished.~~ No fire support, except from combat aviation, can be expected until contact is made with other forces."

b. In the same connection, Paragraph 995, Field Manual 100-5, Field Service Regulations, 15 June 1944, quoted below, should be amended to read as follows: (words lined out to be omitted, words capitalized are added.)

"As airborne units are COMPOSED OF SELECTED PERSONNEL, PARTICULARLY TRAINED FOR A HIGHLY SPECIALIZED MISSION, IT IS DESIRABLE THAT THEY BE WITHDRAWN FROM ACTION AS SOON AS PRACTICABLE ~~not organized or equipped for sustained action they should be employed only when they can be supported or relieved within a period of 3 to 5 days.~~ Timely relief facilitates reorganization and reequipping and ensures early availability for further missions."

c. The Tactics and Technique of Airborne Troops, Field Manual 31-30, 20 May 1942, is outdated by actual airborne operations. A study shows that it fails to make any distinction between tactical air landed troops, landing on unprepared landing fields and air landed troops who land on an airfield which has been cleared of the enemy and is relatively free of hostile fire. During airborne actions in Europe, glider elements never landed on a prepared landing field and in one instance (Wesel operation) glider elements were landed in landing zones entirely separate from and independent of the drop zones of the parachute elements. It is believed that cognizance should be taken in the manual of these different categories of air landed troops in view of experience in Europe. Further, the manual does not touch on the overall tactical employment of the airborne division as such. The only reference made to echelons higher than the parachute regiment is to task forces and duties of task force commanders of forces comprising parachute elements and air landed elements. These discussions, the General Board concludes, do not give a clear picture of the functioning or the employment of the airborne division as a single tactical unit. It is recommended that the manual be revised by appropriate agencies of the War Department.

Bibliography

Chapter 3

1. Letter to Commanding General, Third Army, dated 24 July 1945, Major General J. M. Dovine.

2. Letter to Commanding General, 82d Airborne Division, dated 20 July 1945, Brigadier General I. P. Swift.

3. Letter to Commanding General, II Corps, APO 19, United States Army, dated 25 July 1945, Major General M. D. Taylor.

4. Table of Organization and Equipment 71-T, dated 16 December 1944.

5. Summary of opinions as to the future airborne division, Appendix 3, this report.

6. General opinions of senior airborne commanders obtained through interviews and answers to various questionnaires.

7. Major General James M. Gavin's letter in answer to the General Board's questionnaire.

8. Operation reports of First Allied Airborne Army, XVIII Airborne Corps, 17th, 82d, and 101st Airborne Divisions.

9. Opinions of senior commanders in answer to War Department questionnaire.

THE GENERAL BOARD

United States Forces, European Theater

Study Number 16

APPENDIX NUMBER 1

Study Directive Number 142

THE GENERAL BOARD
UNITED STATES FORCES, EUROPEAN THEATER
APO 408

R 320.2/49 TGBSY 3 October 1945

STUDY DIRECTIVE NUMBER 142.

TO : Assistant Chief of Staff, G-3.

SUBJECT: Organization, Equipment and Tactical Employment of the Airborne Division.

1. Mission.

Prepare detailed report and recommendations on the organization, equipment and tactical employment of the airborne division.

2. Scope.

a. Report and recommendation will include consideration of the following matters:

(1) The desirability of retaining the airborne division.

(2) The desirability of retaining only separate parachute units and employing part or all of the infantry division, reinforced by these specially trained parachute units, for airborne operations requiring a force greater than that inherent in the separate parachute elements.

b. If the retention of the airborne division is deemed desirable (sub-paragraph 2a(1), above), then report and recommendation will include:

(1) Organization.

The composition of the airborne division, to include proportion of parachute infantry and glider or aircraft-borne infantry, artillery, engineers, signal, reconnaissance, and service troops desired, including the types and numbers of vehicles essential to the operation of the division after it has landed. The study should show the composition and purpose of all subordinate headquarters and units down to include separate companies (batteries, troops), internal companies, and separate detachments.

(2) Equipment.

(a) Major items of equipment to be included in each element of the division.

(b) If any modifications in present major items of equipment are desired, indicate these modifications.

Appendix 1

(3) Tactical Employment.

(a) Primary role of the airborne division.

(b) Secondary roles.

(c) Recommended changes in current War Department doctrine as to the tactical employment of the airborne division.

c. If it is deemed desirable to retain only separate parachute units, then report and recommendations will include:

(1) Organization.

The composition of parachute units (brigades, regiments, separate battalions), with consideration of organic engineers, signal, reconnaissance, and service troops. The structure of elements should show all subordinate headquarters and units to include separate companies and detachments in sufficient detail to indicate the size and purpose of each.

(2) Equipment.

(a) What major items of equipment should be included in each component of the parachute units?

(b) Where modifications are desired in present items, indicate those modifications.

(3) Tactical Employment.

(a) Primary role.

(b) Secondary roles.

(c) Recommended changes in current War Department doctrine on the employment of parachute units.

3. Source Material.

a. Current War Department publications.

b. Special comments by senior commanders in the European Theater.

4. Instructions.

a. See Plan of Operation, The General Board.

b. You are authorized to request the assistance of other sections in the preparation of this report. Requests for the assistance of other staff sections will be initiated without delay and will include the general nature and scope of the assistance desired together with the approximate date upon which this information will be required.

STUDY DIRECTIVE NUMBER 142, subject: "Organization, Equipment and Tactical Employment of the Airborne Division", 3 October 1945 (Contd).

c. You are further authorized to request the assistance of agencies and personnel under jurisdiction of United States Forces, European Theater in preparation of the report. Such requests will be submitted to the Secretariat.

FOR THE PRESIDENT OF THE BOARD:

L. R. GARRISON,
Colonel, AGD,
Secretary.

THE GENERAL BOARD

United States Forces, European Theater

Study Number 16

APPENDIX NUMBER 2

Summary of opinions of senior officers in answer to War Department questionnaire.

SUMMARY OF REPLIES RECEIVED TO WAR DEPARTMENT LETTER REQUESTING OPINIONS OF INDIVIDUAL OFFICERS TO QUESTIONS ON AIRBORNE FORCES IN THE UNITED STATES POST-WAR MILITARY ESTABLISHMENT

by Lt. Col. H. D. Ivey, G-3 Section, USFET

1. QUESTION: CONSIDERING THE AIRBORNE OPERATIONS OF THE CURRENT WAR, WHAT IN YOUR OPINION HAS BEEN THE PRIMARY ROLE OF THE AIRBORNE TROOPS, (A) TACTICAL (B) STRATEGIC (C) COMBINATION OF BOTH STRATEGIC AND TACTICAL?

ANSWER:

18 believe they were completely tactical
7 believe they were practically all tactical
10 believe they were practically all tactical, except for the existence of a strategic threat

35 TOTAL

5 believe the past operations to be strategic

28 felt the operations were evenly divided between tactical and strategic
4 made emphasis to the tactical phase being predominant

32 TOTAL

1 made no comment

73 GRAND TOTAL

2. QUESTION: WHAT DO YOU CONCEIVE TO BE THE FUTURE ROLE OF THE AIRBORNE TROOPS?

ANSWER:

6 believe that they would be completely tactical
6 believe they would be practically all tactical
6 believe they would be practically all tactical but still exercising a strategic threat

18 TOTAL

14 believe future operations would be completely strategic
7 believe future operations would be practically all strategic

21 TOTAL

24 believe the role would be evenly divided
3 believe future operations would be tactical and strategic favoring the tactical
6 believe future operations would be tactical and strategic favoring the strategic

33 TOTAL

1 made no comment

73 GRAND TOTAL

COMMENT: Based on the findings shown to the answers made to question 1 above there is not a uniform understanding of the words tactical and strategic, the above replies should be interpreted in the same manner. However, another misunderstanding has arisen in that many officers were talking in light of the post-war army of relatively small strength and others were speaking of a future large-scale war. The growing emphasis on the strategic in this question can be mainly laid to the fact that most officers envisaged a small post-war army which must be capable of moving great distances to meet sudden attacks against any portion of American controlled territory.

3. QUESTION: BASED ON ANSWERS TO B ABOVE WHAT REASONABLE PROPORTION SHOULD BE OBTAINED BETWEEN SPECIALIZED AIRBORNE DIVISIONS AND STANDARD INFANTRY DIVISIONS IN THE POST-WAR MILITARY ESTABLISHMENT?

ANSWER: Of the 48 officers giving definite proportion as answers to this question, the following breakdown can be given:

Percentage	Number
5%	7
7%	3
8%	3
10%	17
11%	1
13%	3
14%	1
15%	2
16%	1
17%	1
20%	1
25%	3
28%	1
29%	1
30%	1
33%	2

It should be noticed that the percentage most highly nominated was ten and that the average was thirteen. Sixteen officers did not believe that a fixed percentage should be given but the ratio should be determined by the size, position and type of any potential enemies of the U.S. Eight officers believed that all units should be trained in airborne technique and the percentage should be determined only at the time such units were committed in any particular operation. One officer made no comment.

COMMENT: Here again were basically two views in interpreting the question. Those who were talking in terms of a future major war believe the percentage should be nearly ten percent, but those who were thinking in terms of a post-war peace time army advised a higher percentage and in most cases specified a minimum, and almost all tend to emphasize the smaller the army, the higher percentage of airborne troops should be used. (Most all emphasized that a small peace-time army must have superior mobility in order to bring sufficient force in any one place in case of an attack.)

4. QUESTION: RATHER THAN SPECIFICALLY DESIGNATING AIRBORNE DIVISIONS, WOULD IT BE PRACTICAL OR DESIRABLE, IN A RELATIVELY MODEST REGULAR ARMY, TO ENVISAGE ALL DIVISIONS TRAINED IN AIRBORNE TECHNIQUE AND OPERATION? WOULD SUCH A VIEW HOLD IF SEPARATE SPECIALIZED UNITS MAINTAINED AS PARACHUTE UNITS?

ANSWER:

3	believe that it would be desirable but not practical to train all infantry divisions in airborne technique and operations
1	believed it possible but not desirable
19	believed that it would be both practical and desirable to perform such training
50	believed it would not be practical or desirable to accomplish this adjustment

73 GRAND TOTAL

All officers who stated that it was not practical or desirable to train standard infantry divisions as airborne divisions stated that it would not alter their opinion even if separate parachute units were maintained. All officers who believed it was both practical and desirable to train all divisions as airborne divisions stated that it was still desirable to maintain specialized parachute units.

COMMENT: As the question does not clearly define what consists of airborne technique and operations, the above answers were calculated on the basis that the question meant complete training in airborne technique so that any division so trained could perform vertical envelopment and strategic action with the same efficiency as the present airborne units. A high percentage of the officers who believed that it was not practical or desirable to train all divisions as airborne divisions stated that it would be desirable to train all infantry units to be air transportable.

Many limited such a recommendation to airplanes, while others went so far as to include gliders. They were not thinking in terms of vertical envelopment and strategic attack, but in terms of fast movement for strategic purposes prior to employment as standard infantry divisions. Many believed the future development in aircraft would allow for a great deal more use of air transportation when moving large units.

5. QUESTION: ON WHAT MAXIMUM LIFT CAPACITY SHOULD TROOP CARRIER GROUPS BE AVAILABLE FOR AIRBORNE PURPOSES, EXPRESS IN TERMS OF UNITS TO BE LIFTED?

ANSWER: a. Of those who understood this question to mean the ratio between troop carrier units and airborne units:

2	answered one troop carrier group per infantry combat team
5	answered one troop carrier group per airborne division
4	answered one troop carrier group per airborne infantry regiment

11 TOTAL

b. Of those who understood this question to mean the percentage of airborne forces available to be carried at any one time:

1 answered 30%
5 answered 50%
1 answered 60%
2 answered 75%
4 answered 100%

13 TOTAL

c. Of those who understood this question to mean, what is the maximum number of units to be carried at one time:

17 answered 1 division
3 answered 1 corps
9 answered 2 divisions
2 answered 3 divisions
1 answered 4 divisions
1 answered 10 divisions
1 answered 1 regiment
2 answered 1 combat team

36 TOTAL

13 no comment

73 GRAND TOTAL

COMMENT: The above summarization has been broken down into three categories to avoid difficulty in the computation based on the different assumptions. In their discussions most officers emphasized the fact that airborne forces attain their greatest value through movements of large numbers of troops within a short interval of time.

6. QUESTION: THROUGH WHAT COMMAND CHANNELS SHOULD AIRBORNE ELEMENTS OPERATE?

ANSWER:

2 believe airborne forces should be under command of Army Air Forces
34 believe airborne forces should be a separate command under the War Department, comprising air, ground and service elements
33 believe airborne forces should be under the control of Army Ground Forces

4 no comment

73 GRAND TOTAL

COMMENT: Most of the answers to this question were based on the relative position of the officer commenting to the army as a whole. In general air force officers tend to favor control by Army Air Forces. Officers of airborne units favored a separate

airborne command and officers of standard ground forces organizations favored control through Army Ground Force channels. In the discussions of the various officers leading up to their decisions, a strong need for cooperation between air, ground and service forces was emphasized. Many suggested liaison arrangements and technical channels in addition to routine command channels.

7. QUESTION: WHAT AGENCY SHOULD BE MAINTAINED FOR ESSENTIAL RESEARCH AND DEVELOPMENT OF AIRBORNE TACTICS, TECHNIQUE AND DOCTRINE: UNDER WHAT COMMAND CHANNELS SHOULD IT OPERATE?

ANSWER:

14 believed the development should be carried out by the staff of the airborne army or command established to control airborne troop carrier and attached troops, which would be under the War Department

4 believed the development should be carried out by the sections of the present General and Special Staff of the War Department

3 believed the development should be carried out by the Staff of Headquarters Army Ground Forces

45 believed the development should be carried out by an airborne board center or Joint Army Air Force, Army Ground Force and Army Service Force agency and of these:

- 12 thought the board should be assigned to the War Department
- 23 thought the board should be assigned to the Army Ground Forces
- 9 thought the board should be assigned to the Joint Chiefs of Staff

1 believed the development should be assigned to the Infantry School

6 gave no comment

73 GRAND TOTAL

COMMENT: Here again most officers favored an organization which was familiar to their experience in the army. In general all officers believe that continual research in the establishment of a center of some kind with a great deal of liaison and pooling of technical knowledge from all branches of the service. Some even suggested that the Navy be brought in to add to add to the scope of establishment for the development of airborne tactics, technique and doctrine.

8. QUESTION: IN VIEW OF THE FACT THAT AIRBORNE FORCES COMPRISE ELEMENTS OF THE AIR, GROUND, AND SERVICE FORCES, SHOULD THERE BE INCLUDED IN THE WAR DEPARTMENT AN ADVISORY STAFF GROUP TO WHICH SHOULD BE REFERRED ALL MAJOR MATTERS OF POLICY, ORGANIZATION, EQUIPMENT, TACTICS, AND TECHNIQUE RELATING TO AIRBORNE FORCES?

ANSWER:

41 officers believed that such an advisory staff group should be established in the War Department

10 officers believed that the staff group should be established at Headquarters Army Ground Forces instead

2 officers believed that the staff group should be a part of Joint Chiefs of Staff

8 officers recommended that a headquarters for airborne forces, having all elements of air, ground and service should act in an advisory capacity to the War Department on such matters

9 believed that the research center or board would be sufficient to perform the research and War Department advisory functions

3 made no comment

73 GRAND TOTAL

COMMENT: Practically all officers agreed that an advisory staff group should be established. There was some difference of opinion as can be seen above as to the particular headquarters in which it should function. The major difference of opinion was based on whether or not a separate airborne command headquarters would be established.

9. QUESTION: WHAT FACTORS ARE DEEMED OF OUTSTANDING IMPORTANCE IN RETAINING OUR PRESENT SUPERIORITY IN THE AIRBORNE FIELD?

ANSWER:

7 officers emphasized that superiority is based upon air superiority including a superior number of transport planes

17 officers emphasized that better materiel both air and ground is the reason

7 officers emphasized superiority based on the fact that an independent command if left free to develop would be the basic step to attaining superiority through other means

15 officers emphasized that superiority is based upon research in equipment and the tactical employment of equipment

11 emphasized the development of an independent airborne doctrine and esprit is the basic reason

7 emphasized the large percentage of airborne divisions

5 emphasized the cooperation between air and ground elements of airborne operations

2 emphasized the superior personnel assigned to the airborne and air force units

2 made no comment

73 TOTAL

COMMENT: The summarization of replies above is based on the factors which each officer seemed to emphasize most. Practically all officers emphasized two or three factors. However, in order to get a better picture of the total emphasis place, the calculation was made in this manner.

10. QUESTION: ANY OTHER COMMENTS OF A PERTINENT CHARACTER?

ANSWER:

(1) Several officers emphasized the need for larger, more self supporting airborne operations.

(2) Several officers suggested that all officers of the U. S. Army be indoctrinated in the methods and uses for airborne troops.

(3) One officer emphasized the need for special training for staff officers in the higher headquarters of the airborne organizations and a greater coordination between air and ground officers.

(4) Several officers emphasized the need for unified command for airborne operations, whether the commander be an air or airborne officer they emphasized was immaterial.

(5) Another officer emphasized that airborne training must include both night and day operations.

(6) Several officers outlined the need for airborne units to be considered elite troops.

(7) A considerable number of officers mentioned the increased efficiency that could be gained by making all airborne personnel parachutists and restricting glider transportation to equipment alone.

(8) Many officers recommended that airborne units be organized into an airborne corps similar to the establishment of the armored force. The similarity between Navy and Marine Corps relationship and the airborne units and army relationship was mentioned by several officers, and in their discussion they included the similarity between Marine amphibious landings and airborne landings in the assaults upon beachheads.

(9) Much discussion was given to the development and increase of resupply operations as a major factor in increasing the efficiency of strategic use of airborne units.

(10) Several good discussions are included on the training of airborne units to fight in the standard infantry role after the phase of the initial airborne shock has been completed. One officer emphasized the inability of airborne troops to efficiently use automotive transportation and other equipment which they acquired while fighting in the role of standard infantry divisions.

(11) One officer believed the selection of superior personnel for airborne and air force units was not necessary and that it embarrassed and lowered the efficiency of a standard infantry and other ground force units.

(12) A suggestion was made that troop carrier planes be modified to include armor for the pilot and co-pilot in order to reduce the loss of aircraft in flight. Another officer envisioned the future beachhead operations to be entirely airborne.

(13) Strong emphasis was given by one officer for the need of increased efficiency in signal communication. He believed the development in this field would be the easiest and most direct method of increasing efficiency of airborne units.

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APPENDIX NUMBER 3

Summary of opinions as to future airborne division.

TABLE OF OPINIONS AS TO FUTURE AIRBORNE DIVISION

Tabulated below is a consensus of opinion of combat-experienced officers of the European Theater of Operations. Answers were obtained from a questionnaire issued by the Army General Staff, three questionnaires issued by this Board and letters of various individual officers. One hundred and two officers were canvassed. Not all officers answered all questions. The group of officers is divided almost evenly between airborne and non-airborne officers.

Question	Senior officers with airborne experience	Senior officers with little or no airborne experience	Junior officers Lt Col and below all with airborne experience	Summary
1. Should the airborne division be eliminated in favor of standard infantry divisions transported by air?	1 said yes 35 said no 36	1 said yes 25 said no 26	1 said yes 12 said no 13	75 officers Yes 3 No 72 75
2. Could standard divisions be used for airborne operations if used in conjunction with parachute units in combat?	8 said yes 28 said no 36	16 said yes 10 said no 26	6 said yes 7 said no 13	Yes 30 No 45 75
3. Should the airborne division be retained?	34 said yes 2 said no 36	14 said yes 12 said no 26	8 said yes 5 said no 13	Yes 56 No 19 75
4. What should be the organization of the airborne division?	23 - no comment *10 - same as Inf Div 1 - slightly less than Inf Div 34	11 - no comment *3 - same as Inf Div 14	2 - no comment *5 - same as Inf Div 1 - 4 Para Regts in Airborne Div 8	36 - no comment *18 - same as Inf Div 1 - slightly less than Inf Div 1 - 4 Para Regts 56

* A large majority of these officers also desired the weapons and equipment of the standard infantry division. The minority made no comment.

5. What additions in equipment are most desirable?	7 – more vehicles 3 – more communication equipment	3 – more vehicles	10 – more vehicles 10 – more communication equipment	20 – more vehicles 13 – more communication equipment
6. What developments in equipment are most desirable?	5 – weapons leading to heavier fire power 3 – pathfinder equipment	2 – weapons leading to heavier fire power 1 – improved parachute	12 – weapons leading to heavier fire power 4 – lighter longer range radios 4 – lighter warmer clothing 1 – pathfinder equipment	17 – more fire power 4 – lighter longer range radios 4 – pathfinder equipment 4 – light warm clothing 1 – improved parachute
7. What changes are desired in Air Corps equipment?	8 – design planes and gliders to fit airborne needs 1 – powered gliders	3 – design planes and gliders to fit airborne needs 1 – armor planes and gliders	1 – armor planes and gliders	11 – design planes and gliders to fit airborne needs 2 – armor planes and gliders 1 – powered gliders

	TACTICAL MISSIONS	
8. What are the primary missions of airborne troops? What are secondary missions?	1. To seize, hold or otherwise exploit important tactical localities in conjunction with, or pending the arrival of, other military or naval forces.	28 officers said primary mission 2 officers said secondary mission
	2. To attack the enemy rear and assist a breakthrough or landing by the main force.	5 officers said primary mission 5 officers said secondary mission
	3. To block or delay enemy reserves by capturing and holding critical terrain features, thereby isolating the immediate battlefield.	2 officers said primary mission 4 officers said secondary mission
	4. To capture enemy airfields.	0 officers said primary mission 2 officers said secondary mission
	5. To capture or destroy vital enemy establishments, thereby paralyzing his system of command, communications and supply.	2 officers said primary mission 8 officers said secondary mission
	6. To create diversions.	0 officers said primary mission 0 officers said secondary mission
	7. To assist in delaying a retreating enemy until the main forces can destroy him.	1 officer said primary mission 1 officer said secondary mission
	8. To reinforce threatened or surrounded units.	0 officers said primary mission 2 officers said secondary mission
	9. To seize islands or areas which are not strongly held and which the enemy cannot easily reinforce.	0 officers said primary mission 5 officers said secondary mission
	10. To create confusion and disorder among the hostile military and civil personnel.	0 officers said primary mission 2 officers said secondary mission

Note - 3 officers stated missions as listed in TC 113 should remain unchanged.
No officer suggested that any of the above missions be added to or changed.

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APPENDIX NUMBER 4

Tabulation of attachments made in World War II to airborne units.

APPENDIX NO 4

ATTACHMENTS TO DIVISIONS IN AIRBORNE OPERATIONS

The following tabulation shows attachments made to airborne divisions in some of their major actions. It purports to show that, once committed to a ground role, the airborne division must then be reinforced, by attachments, to the strength of the infantry division.

Operation "Husky", Sicily

82 Airborne Division

39 Regimental Combat Team
26 Field Artillery Battalion
34 Field Artillery Battalion
62 Armored Field Artillery Battalion
1 Battalion, 77 Field Artillery
20 Engineer Battalion (C)
83 Chemical Battalion (4.2" Mortar)
Detachment, 56 Medical Battalion

Operation "Neptune", Normandy

82 Airborne Division

Troop B, 4 Cav Ron Sqdn	1 June - 23 June
87 Armd FA Bn	1 June - 8 June
	14 June - 8 July
Co C, 746 Tk Bn	1 June - 11 June
Co A, 746 Tk Bn	13 June - 21 June
Co A, 712 Tk Bn	1 July - 8 July
188 FA Bn	12 June - 8 July
172 FA Bn	16 June - 19 June
Co C, 899 TD Bn	1 June - 19 June
Co A, 607 TD Bn	19 June - 4 July
801 TD Bn	30 June - 1 July
803 TD Bn	1 July - 8 July
Co B, 87 Chem Mortar Bn	15 June - 21 June
Co D, 86 Chem Mortar Bn	1 July - 4 July
3809 QM Trk Co	
3810 QM Trk Co	
1 Plat, 603 QM GR Co	
1 Plat, 464 Amb Co, 31 Med Gp	
493 Collecting Co, 179 Med Bn	
374 Collecting Co, 50 Med Bn	
429 Litter Bearing Platoon	
591 Collecting Company	

101 Airborne Division

Troop C, 4 Cav Squadron
3807 QM Trk Co
3808 QM Trk Co
2 Plat, 603 QM Co (GR)
491 Med Coll Co
_____Armored FA Bn
_____TD Battalion
1 Co, Tank Bn _____M

Operation "Dragoon", Southern France

British 2 Para Brigade Group

517 Para RCT
509 Para Bn
1 Bn 551 Para Inf
550 A/B Bn
463 Para FA Bn
602 Pack FA Bn
442 Infantry Anti-Tank Co
887 A/B Engr Co
Co "A", 2 Cml Bn (4.2 Mortar)
Co "D", 83 Cml Bn (4.2 Mortar)
512 A/B Sig Co
676 Med Collecting Co

Operation "Market", Holland

82 Airborne Division

Unit A, 50 Field Hosp	17 Sept -
666 QM Trk Co	19 Sept -
1 Coldstream Gds Armd Bn (Br)	19 Sept - 22 Sept
5 Coldstream Gds Inf Bn (Br)	19 Sept - 22 Sept
2 Irish Gds Bn (Br)	19 Sept - 22 Sept
Sherwood Rangers Yeomanry (Br)	19 Sept - 10 Oct
Royals Recce Bn (Br)	19 Sept - 9 Oct
Polish Prcht Brigade	25 Sept - 30 Sept
231 Brigade (Br)	30 Sept - 1 Oct
3 Gds Brigade (Br)	30 Sept - 1 Oct
5 Coldstream Gds Inf Bn (Br)	30 Sept - 10 Oct
79 FA Regt (Br)	30 Sept - 2 Oct
304 AT Btry (Br)	30 Sept - 3 Oct
506 Prcht Inf	1 Oct - 3 Oct
502 Prcht Inf	3 Oct - 4 Oct
130 Inf Brigade (Br)	5 Oct - 6 Oct
2 Gren Gds Bn (Br)	6 Oct - 7 Oct
13/18 Hussars	10 Oct - 10 Nov

Operation "Varsity", Rhineland

17 Airborne Division

1 Commando Brigade
771 Tank Bn
605 TD Bn (3" Towed with 55 DUKWs)
692 FA Bn (25 Pdr)
387 AAA AW Bn
Co A, 3 Cml Bn (Mtz)(4.2 Mort)
One (1) AT Bty SP (17 Pdr)
53 (W) Div Arty Gp (In Support from P Hour)
81 Fd Regt
83 Fd Regt
133 Fd Regt
17 A Tk Regt
25 LAA Regt
77 Med Regt & AGRA
1 Bty 382 HAA Regt

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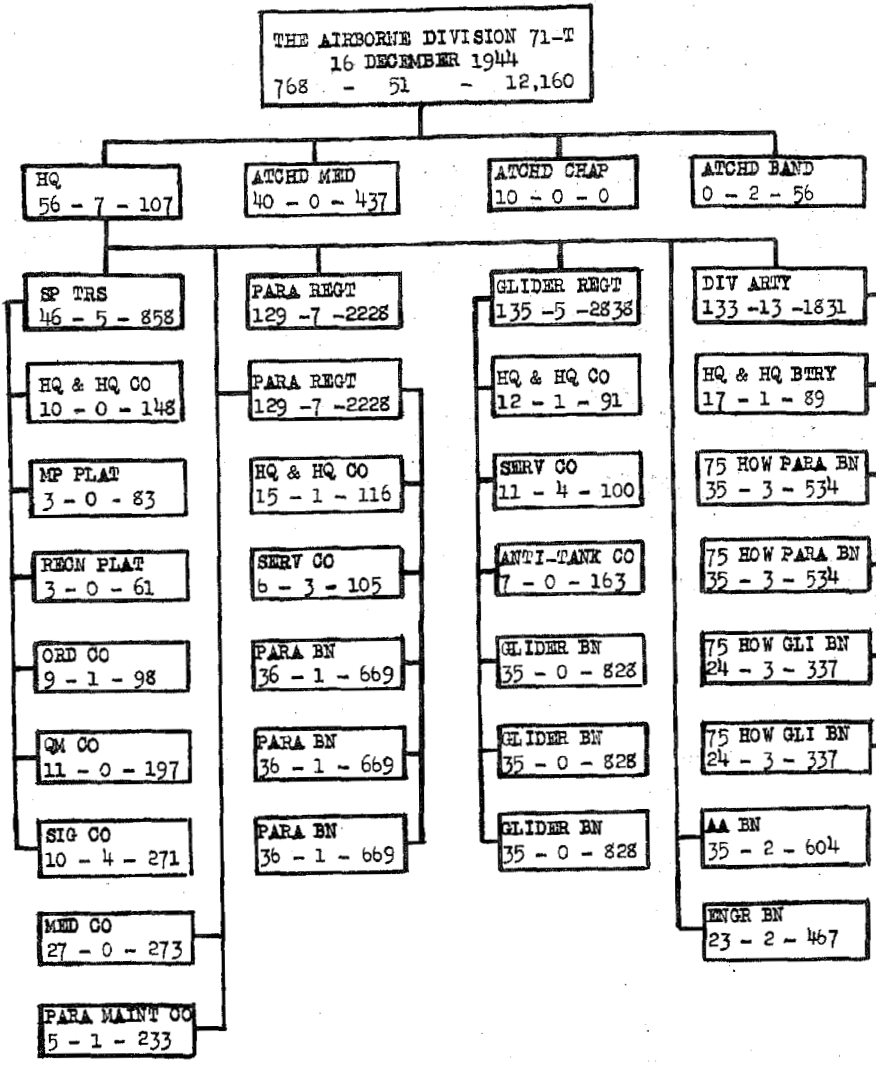
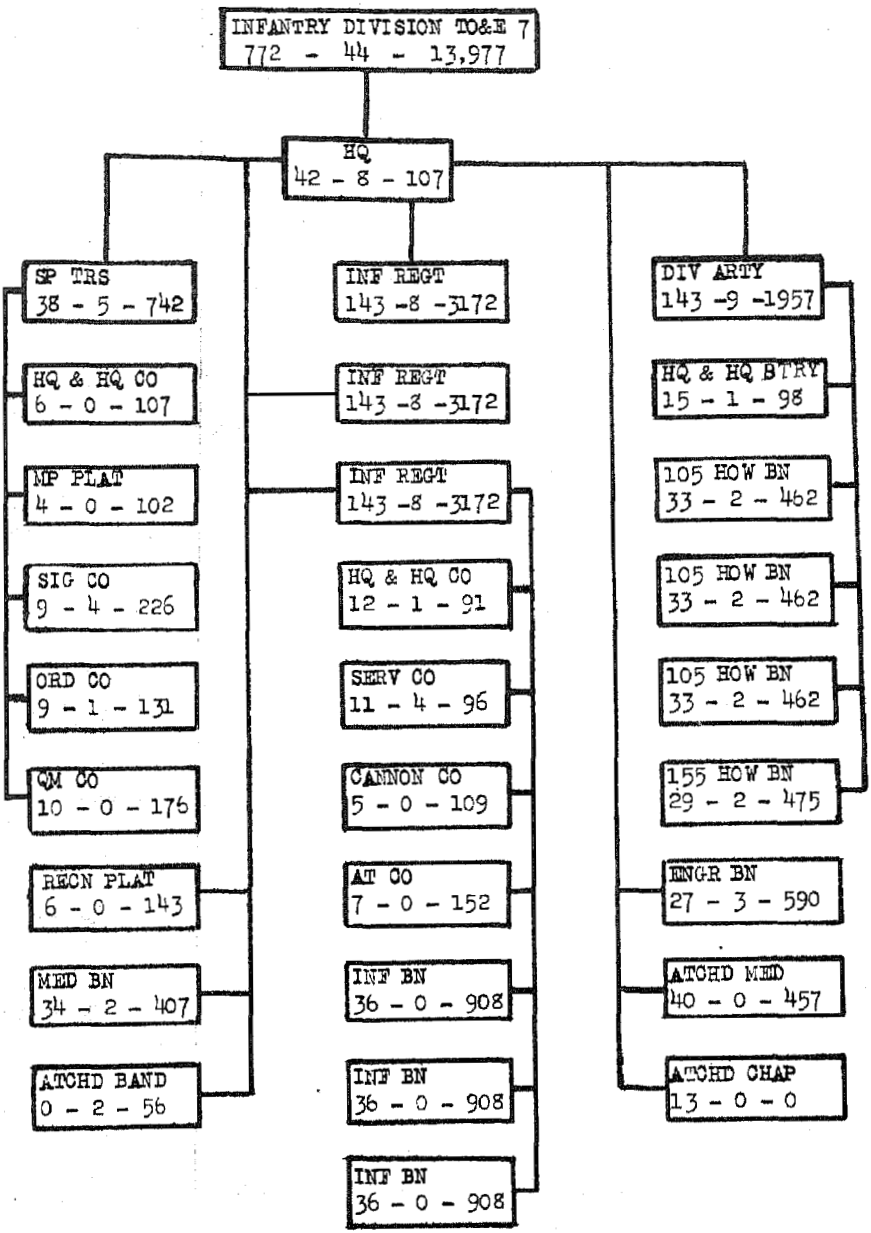
APPENDIX NUMBER 5

Tables of Organization of the airborne and infantry divisions.



AIRBORNE DIVISION

Inf Para Bn - Hq & Hq Co., 3 Rifle Cos.
Inf Glider Bn - Hq & Hq Co., 3 Rifle Cos., Hvy Wpns Co.
FA Para Bn - Hq & Hq & Serv Btry., 3 How Btries, AA & AT Btry.
FA Glider Bn - Hq & Hq & Serv Btry, 2 How Btries.
AA Bn - Hq & Hq Btry, 3 AW Btries, 3 MG Btries.
Engr Bn - Hq, Hq & Serv. Co., 2 Para Cos., 1 Glider Co.



INFANTRY DIVISION

Inf Rifle Bn - Hq & Hq Co., 3 Rifle Cos., Hvy Wpns Co.
105 How Bn - Hq & Hq Btry, 3 How Btries, Service Btry.
155 How Bn - Hq & Hq Btry, 3 How Btries, Service Btry.
Engr. Bn - Hq, Hq & Serv Co, 3 Combt Engr Cos.
Med Bn - Hq & Hq Det, 3 Coll Cos., 1 Clr. Co.

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United States Forces, European Theater

Study Number 16

APPENDIX NUMBER 6

Letter of General Omar N. Bradley to Commanding General, United States Forces, European Theater, dated 25 July 1945.

HEADQUARTERS 12TH ARMY GROUP
APO 655
U. S. Army

322 (G-3) 25 July 1945

SUBJECT: Airborne Forces in the United States Post-War Military Establishment.

TO : Commanding General, United States Forces European Theater, (Rear), APO 887, U.S. Army.

1. In compliance with Ltr WD, file AG 322 (26 June 45) OB-S-WDSSP, subject as above, and 1st Ind your headquarters dated 6 July 1945, copies of subject correspondence were sent to Third, Seventh and Ninth Armies requesting the comments of Corps Commanders, General Officers who have served with airborne troops in combat and such other officers as those Army Commanders may select.

2. The expression of opinions on the subject, dictated by General O. N. Bradley just prior to his departure from this theater, are quoted in full as follows:

" 1. In my opinion, the primary role of airborne troops in the operations which have just been completed has been to assist an attack on a strongly-held enemy position, especially one which is behind an obstacle. In all cases where an airborne operation was used, and also in those operations which were planned but never executed, it was felt that the drop must be made at such a place and at such a distance that the forces could be relieved by ground action within a reasonable time. This condition of early relief was made necessary by the necessity for overland supply and to supply anti-tank weapons which could not be taken in airborne.

2. With the almost complete domination of the air reached in the later stages and with the decrease in hostile anti-aircraft fire caused by loss of the enemy's equipment, it might have been possible to use an airborne operation at a distance and supply it by air without too great a loss in troop-carrier planes. I do not believe that a distant airborne operation could have been supplied in the early phases of the campaign.

3. It may be that with the development of recoilless weapons, an airborne operation in the future may be able to defend itself against armored attacks without being reinforced overland by heavier anti-tank weapons. However, in any operation where the outcome is not so apparent as it was in the later stages of our operation, I believe that the conditions for airborne operations will be about as stated above; that is, at points where the forces can be reached by ground action within a reasonable time.

4. In my opinion, airborne operations back of Utah Beach, where there was a water hazard behind the beach, were essential for the success of the attack. I also feel that had the Rhine River been defended strongly it would have been highly desirable to use airborne troops in the assault crossing.

5. All of these operations are of a tactical nature, and I do not see how any airborne operation can be of a strategic nature, unless the over-all strategy is dictated by the fact that some operation is feasible with an airborne operation and would not be feasible without it.

6. I believe that the future primary role of the airborne troops will be similar to the role played in this operation; that is, to assist in the assault of prepared positions, particularly where a landing has to be made.

7. With respect to 3a (3), I am unable to give an answer. It is my opinion that the proportion between specialized airborne divisions and standard infantry divisions would vary with any assumed strength of infantry divisions or the purpose for which such divisions are maintained; that is, for training purposes or to meet a threat.

8. With a relatively modest regular army, it should be feasible to train several or all standard type divisions in airborne technique, provided a certain number of parachute units were available to lead in any airborne operation.

9. The maximum lift capacity of troop carrier groups which should be kept available for airborne operations would depend entirely upon the size of the army authorized. I do not feel qualified, therefore, to give an answer to 3c.

10. In answer to 3d, airborne elements should be a part of the ground forces and should be under the command of some ground force headquarters.

11. The answer to 3e will depend upon whether or not we have one research and development agency, or one for each branch and arm. If we have one for each, I think we should have a separate development group for airborne tactics, technique and doctrine, and that it should be closely associated with that of the infantry, since the primary role of airborne troops is to function as any other infantry unit after they are landed.

12. The answer to 3f is dependent upon the post-war organization of our national defense, and whether we have separate air, navy, and ground departments, or whether they are headed up under one combined staff.

13. In answer to 3g, the retention of our present superiority in the airborne field would depend upon our ability to continue with superior planes and other equipment in sufficient quantities."

FOR THE ARMY GROUP COMMANDER:

J. H. BLOSS
Lt Col, AGD
Asst Adj Gen

"A CERTIFIED TRUE COPY"

J. E. STUDER,
CWO, USA.

THE GENERAL BOARD

United States Forces, European Theater

Study Number 16

APPENDIX NUMBER 7

Answer to Major General M. B. Ridgeway's questionnaire by Major General James M. Gavin, Commanding General, 82d Airborne Division.

APO 469, U. S. Army

20 May 1945

Dear General Ridgway:

I have just learned that you are leaving in the morning and I am therefore preparing the answers to your attached memorandum of May 16th. I have taken the liberty of adding several items for further study. I feel that the greatest single contribution that can be made to our national defense in the postwar years can be made in the airborne field. Intensive, exhaustive study must be conducted with a view to developing new means and methods of exploiting the apparently limitless potentials of this powerful arm.

Sincerely,

s/ James M. Gavin
JAMES M. GAVIN
Major General, U. S. Army,
Commanding.

Maj Gen M. B. Ridgway,
Commanding,
XVIII Corps (Airborne),
APO 109, U. S. Army.

A TRUE COPY:

E. STUDER
CIC, USA

A. What airborne forces should be included in our post-war military establishment?

B. How should they be organized?

Answer: The answer to these questions is based upon the presumption that what is desired is:

First, the minimum ideal airborne force;

Second, that manpower, aircraft, etc. will be available within the provisions of the War Department's post-war plans.

A minimum of one airborne division should be maintained at war strength in the southeastern portion of the United States, and one airborne division at war strength in the southwestern part of the United States. It is important that these divisions be kept at war strength and ready for prompt commitment. The area in the southeastern portion of the United States is recommended for one division because of the large number of available airfields, favorable meteorological training conditions, and likelihood of commitment in a Caribbean-Central American sphere. One war strength division is the smallest size unit with which comprehensive and thorough training and development of airborne technique can be conducted. This division will be ideally located for the execution of this mission. Both divisions will be well located to provide parent units for the training of the annual quota of civilians made available to the Army for one year's training. One separate parachute regiment should be stationed in such an area that it can provide an immediate light, small, striking force in the Central American sphere. I believe that this regiment should be stationed in the Canal Zone. Summarizing the ideal size force we would have two divisions in the United States and one regiment in the Canal Zone. In addition, in the Pacific Theater there should be an airborne division available for prompt commitment anywhere in our sphere of influence in the western Pacific. It would also be advisable to have a separate parachute regiment stationed in the Hawaiian Islands available for prompt reinforcement in any threatened area, or prompt counterattack in the event of an attack. The total airborne forces recommended, therefore, amount to three airborne divisions and two separate parachute regiments. Over these forces should be an airborne headquarters comparable to a corps headquarters. This headquarters should take the place of the airborne command. It should be charged with responsibility for the airborne school, the airborne test and development center, formulation and dissemination of airborne combat doctrine, maintenance of a high standard of airborne training in all airborne units, the carrying out of the War Department's plans in training civilian one-year inductees, and the formulation and keeping up-to-date of the War Department's plans for the operational commitment of airborne troops.

The airborne school should have the mission of conducting courses of training with a view to qualifying both parachutist and gliderist. All incoming troops should be given a thorough basic course (approximately six to eight weeks) in parachute technique and glider technique. Upon graduation they will be declared qualified airborne troopers by the Commandant of the airborne school and will then be qualified for assignment to an

airborne unit.

All airborne troops should be qualified parachutist and gliderists. It is realized that future operational requirements may make it necessary to discontinue this program during an emergency; however, during the interim, it would pay dividends in case of administration, pride in organization, and facility in training and commitment to have all troops uniformly trained with all airborne means.

C. Under what command channels should they operate?

Answer: Airborne command hardquarters should operate under Army Ground Forces. Airborne divisions and regiments may be assigned to field armies for normal ground training.

D. Should the entire personnel of the airborne division be parachutists, but trained in glider technique too?

Answer: Yes.

E. Should the glider pilot remain in the Troop Carrier squadron or be incorporated in the airborne division? If the latter, should they be organized and trained as a tactical unit and should their strength be above that provided in Airborne Division T/O, December 1944?

Answer: Glider pilots should remain in the Troop Carrier Squadron. They must be trained as a tactical unit. The strength should be as at present provided. In this connection, airborne troops likely to be employed as glider co-pilots must be given training in landing the glider.

F. If not already, should there be a single commander under whom both Troop Carrier and airborne divisions and smaller units operate?

Answer: (1) During times of peace - Yes.

(2) Preparatory to and during an operation - Yes.

G. If the answer to "F" is affirmative, should the single commander be from the air or ground forces, or chosen on his merits, regardless?

Answer: This single commander should be chosen on his merits. It is realized that this single problem may offer one of the most difficult complexities to be solved in the setting up of a functioning airborne command. I believe it is imperative that a very close affiliation be maintained with the Army Air Forces and a great deal of the airborne command staff be officers of the Army Air Forces, and that ultimately be given equal opportunity to command the airborne command as well as officers of the Army Ground Forces.

J. Should there be included in the War Department an advisory staff group to which should be referred all major matters or policy, organization, tactics and technique relating to Army Ground Forces? If so, where should it be - in the OPD,

AGF, or where?

Answer: There should be an airborne staff section in OPD. This staff section should, in addition to keeping abreast of airborne policy, organization, tactics and technique, keep abreast of the offensive potentials of the force and make timely anticipation of the need for its increase or movement. In addition, it should study the defense against airborne forces and then develop and disseminate proper anti-airborne technique.

K. Do you think the present research and development program in troop carrier aircraft, both power and glider, parachute equipment and technique (both personnel and cargo to include the dropping of heavy loads) and Pathfinder equipment and technique is sound and comprehensive? If not, along what lines do you think it is weak and how would you strengthen it?

Answer: The present methods are not sound. Research and development methods are, at present, scattered over too great an area and frequently ineffective because of inadequate means or lack of understanding of the real needs of the troops in the field. For example, the Parachute School continues the testing and development of personnel parachutes and small items of equipment such as demolitions and signal equipment jump containers. The Airborne Command continues the development of larger items of equipment of more general application and use such as large drop containers, tents, garments, etc. The research and development laboratories at Wright Field continue the design and development of gliders, power aircraft and the means in these aircraft for navigating and accurate dropping. In addition to this, some units in the field, particularly this division, have expended considerable effort in the development of Pathfinder equipment. All of this test and development should be charged to one head and that should be the Commanding General of the Airborne Command. It is fundamental that the Army Air Force and airborne ground troops pool their ideas, have a common appreciation and understanding of their mutual requirements, pool their means, and arrive at mutually satisfactory solution to their requirements. This will only be done when all testing and development is under one head. In this connection, it is in this field of test and development that the greatest potentialities of airborne development lie. The impetus that the necessity of war has given to research and development must not be permitted to wane. Considering each of the following items as examples, I would like to make the following comments regarding them:

(a) Pathfinding: We must never lose sight of the fact that the initial airborne operations in any future emergency may, and very likely will, be conducted under cover of darkness because of the likelihood of hostile interception and the great likelihood of hostile ack-ack being in position to do decisive damage to the airborne striking force. It is most important, therefore, that studies in pathfinding be continued and that the present solutions not be accepted as final. Of the three items - radio beacon, "G", and "PPI", the latter shows the most promise of development and, in fact, has already been improved upon. This must be further tested and developed under realistic conditions, but will probably be unlikely to ever provide the precision desired. For this reason the infrared beacon, which gives pin-point accuracy, should be further tested, equipment redesigned, tactics and technique for its

employment developed. Closely associated to this problem is that of ground assembly and drop control. Means must be developed to coordinate the drop between several aircraft in flight, both day and night. The present method of shining a dome light or observing parachutes of other planes is not satisfactory. Means of communication must be developed so that the jump masters and pilots can be kept in touch with each other and a decision made for alternate drop zones if this becomes necessary.

(b) Infrared Equipment: The infrared beacon used to aid pilots on the final run into the drop zone can also be used in ground assembly. It should be further tested and developed. Training in its use must be undertaken. Infrared equipment has proven very valuable in controlling ground patrols. This division has used it on the Rhine River and found it invaluable as a means of communication across the river to patrols operating in hostile territory.

(c) "Lost Chord": This equipment shows great possibilities for use in controlling patrols. Also, it may offer possibilities as an aid to ground assembly and control immediately after landing. Further testing and training must be undertaken with this as soon as practicable.

(d) SCR 536 with Director Antenna: This equipment has apparently proven very satisfactory as an aid in ground assembly. It should be further tested and developed. No doubt many other uses for it will arise.

Airborne Weapons:

It is my belief that the M-1 rifle can be improved upon as the primary arm of the individual parachutist. It should be shorter in length so that it would not be necessary to carry it disassembled during descent. It should also have an automatic feature for use with a much higher rate of fire on occasions when this becomes necessary. The tendency to include more and more BARs in parachute organizations has arisen because of the full appreciation by everybody with combat experience of the need for firepower of this type. The BAR, however, is most difficult to jump with, although it is done. The occasions when such great firepower is needed are very few, and with proper training the individual soldier can be taught to conserve his ammunition and only use full automatic firepower when absolutely necessary. The great majority of the time, a single shot weapon will suffice for all his requirements. This single shot weapon should have the dependability and striking power of the M-1, but not be as long. Most parachute forces of the world (British and German) have designed a weapon for their airborne troops. We should have the same thing; there is a great need for it.

In the antitank field the sky is the limit and the possibilities of further development of individual antitank means show great promise, more now than ever in the past. The Panzerfaust type weapon places any individual parachutist on reasonably good combat terms with a tank. The Panzerfaust should be designed to be jumped with the individual and should be capably of penetrating the armor of any tank. The Gammon grenade should be further developed. It has proven one of the most valuable hand weapons in this war and the more combat experience we have the more practical uses for it we learn. It, however, deteriorates and is not easy to carry

around. The Composition "C" dries out, crystallizes and becomes very dangerous to handle. I am not yet satisfied with the behavior of the grenade under conditions of cold such as we experienced in the Ardennes. Off hand, it would appear as though a better container should be provided for the grenade to keep it from drying out, and it should be possible to vary the sizes of the grenade by adding additional Composition "C". It is interesting that some infantry troops have found it possible to add steel fragments to the grenade to add to its effectiveness against personnel in buildings. This grenade was originally used in our service by the airborne troops and it should be further developed by them.

In the field of crew-served weapons a great deal can yet be done. The 57mm antitank gun, although a splendid weapon, is at present outgunned by enemy weapons. It occupies a position comparable to the 37mm gun about one year ago. It is a splendid weapon, very effective, but the development of the tank and SP by the enemy have greatly reduced its combat effedtiveness. The development of an antitank gun to take the place of the 57mm gun may lie in the field of recoilless weapons, but the 57mm antitank gun is gradually losing its place as the backbone of our antitank defense.

The present 81mm and 60mm mortars have proven invaluable. They are splendid weapons. Ammunition for these mortars will always be a problem for airborne troops, but other than providing better means of individual ammunition carrying, perhaps carts or ammunition truck containers readily convertible into carts, there is a little that can be done about this problem. The sight of the 81mm mortar must be so altered as to permit night firing without revealing its location to nearby enemy patrols. In this division a sight modification recently arrived at by a member of one of our 81mm mortar platoons has proven very valuable. It involves the use of a standard issue small light to provide a lighted collimater at night. It is the most satisfactory solution we have seen to this problem so far.

Among our field artillery weapons, the 75mm Pack Howitzer has proven to be a remarkably fine airborne weapon and has given excellent combat service. It, no doubt, can be improved upon. Possibly the further study and development of recoilless weapons will give us a weapon that can replace it. What is particularly desired is greater range and larger calibre.

Individual Equipment:

The greatest single improvement that can be made in the equipment of the individual parachutist is a redesign of his equipment, including the parachute harness so as to permit immediate release from the parachute when the trooper lands. The present quick-release type parachute does this when the soldier is not wearing his combat equipment, but when loaded down with ammunition, weapons, field bag, it takes a long time, and it is critical time, for the individual to extricate himself from his chute harness. This problem can be solved, I am sure, by steady test and development. It would be the greatest single contribution that we could make to the fighting effectiveness of the individual parachutist.

A small, light-weight chute should be provided for gliderists.

This division has experimented with the use of the standard T-5 reserve, used on a very light-weight, home-made harness. Something should be developed along these lines.

Miscellaneous:

There are, in addition, many small requirements for airborne troops that should be examined when time permits. For example, we need very badly a means of detecting hostile patrols at night other than visual aids, such as a detector based upon the heat principle. A piece of equipment, light in weight, that could be used by road blocks, guards and outposts to indicate the approach of hostile patrols should be developed for our infantry.

Our headgear and clothing can be improved upon. The M-1 helmet is undoubtedly the best in the world. However, the knit cap worn with it cannot, because of its unsightly appearance, be worn at any other time. This means that the soldier has no headgear when he isn't wearing his helmet. Most organizations forbid the wearing of the present garrison type caps because of their unsightly appearance, but even if they are worn they offer little protection, particularly in cold weather. Perhaps something of the beret type should be developed for airborne troops, a headgear that can be stuffed in the pocket and carried during descent and worn when away from the front lines when the helmet is not being worn.

The present combat uniform has proven quite satisfactory, particularly in cold weather. It is far too heavy a garment to expect a soldier to wear, however, in a warmer climate. It is unsightly in appearance despite its utility value. Further work can be done towards providing a better appearing and more practical uniform for airborne troops.

The lace type boot has proven far superior to the buckle top type for airborne troops, particularly for parachutists.

Aircraft:

Both our power aircraft and gliders can be greatly improved upon. Higher cruising speed, self-sealing fuel tanks, protective armament, armor protection for the pilot, elective rapid deceleration in flight, are all features that deserve further study and development.

Training:

This subject is included because I believe it deserves special study. Airborne troops to be effective in their initial engagement, and they must be effective, require special training methods. Imagination, realism, hazards, and hard physical work should keynote our peacetime training. Something should be done to more closely approximate combat conditions. Radio controlled ground targets, targets that fire back, use of enemy equipment and enemy weapons firing ball ammunition - all deserve study. Airborne troops cannot afford to expect to learn their first lessons on the battle field. They must know them well when they land on their first battle field.

THE GENERAL BOARD

United States Forces, European Theater

Study Number 16

APPENDIX NUMBER 8

Letter of Major General Maxwell D. Taylor, Commanding General, 101st Airborne Division, to Commanding General, XVI Corps, APO 197, U. S. Army, dated 10 August 1945.

HEADQUARTLRS 101ST AIRBORNE DIVISION
Office of the Division Commander

APO 472 U. S. Army
10 August 1945

SUBJECT: Recommendations for Changes in Table of Organization and Equipment, Airborne Division.

TO: Commanding General, XVI Corps, APO 197, U. S. Army.

1. In compliance with ETO letter 6 July 45 and first indorsement to same, Headquarters XVI Corps, dated 10 July 1945 the following recommendations are submitted with respect to changes in organization and equipment of the Airborne Division. They are the result of a comprehensive study made by a board of this Division composed of combat-experienced officers representing all arms and services of an Airborne Division.

2. Basic Recommendation. The Airborne Division should be organized exactly the same as the infantry division insofar as tables of organization and equipment are concerned with the following variations:

a. All personnel of the Airborne Division should meet the standards set for parachute troops and should all be trained to enter combat by parachute, glider and air - transport.

b. The tables of equipment should be drawn to permit the substitution of certain items of light equipment in advance of an airborne operation when the standard items of the infantry division are not air-transportable.

3. Discussion.

a. The original conception of an airborne division was one small enough and light enough to be transported virtually in its entirety by C-47 aircraft and CG 4A gliders. Such a division was to be withdrawn quickly after commitment to action by air.

b. This conception has not proved valid in battle experience in Europe. Of the four campaigns in which this Division has taken part, only two were initiated by airborne entry into action. Of 192 days of combat only four days (D and D plus 1 of the Normandy and Holland operations) were fought under conditions of isolation in what may be considered typical airborne combat. The remaining 188 days of battle were fought exactly as any ground division in spite of shortages in heavy weapons and transport resulting from the present defective organization of the Division. The division was never withdrawn quickly as it was always committed in a critical situation which did not permit the relief of combat troops regardless of previously announced intentions.

c. It was originally thought that an Airborne division would go into action in one large air-lift, with only a small base echelon left behind. In practice it does not work out this way. The organization of the division for combat has always consisted of a D-day parachute and glider lift restricted in size by the number of aircraft available. Follow-up echelons have come in

either by air, by water or overland depending on the immediate situation. The largest percent of the strength of the Division ever airborne in a single lift was 47% in the Holland operation. The overland and water echelons have been utilized to bring in heavy weapons, transportation and attachments necessary for sustained combat. The obtaining of this additional heavy equipment has always been difficult because of the deficiencies of existing tables of equipment. Only by begging and borrowing have airborne division commanders been able to assemble anything like the heavy equipment necessary for sustained ground operation.

d. Experience has shown that it is not correct to assume that air lifts will be provided in proportion to airborne troops available for a given operation. Indeed, the reverse is true. The Airborne troops to be taken in are rigidly conditioned by the aircraft available. The division commander is assigned his lift in planes and gliders and then must build up a task force from his division which will fit this air lift and, at the same time, satisfy the ground requirements of his combat mission.

e. It follows, then that if the Airborne Division is to be used ordinarily as an Infantry division, the basic organization of the former should be the same as the latter with necessary variants to permit the occasional operations airborne. With the means of an Infantry division to draw on, the Airborne commander can always make up a suitable Airborne task force. As aircraft and gliders increase in size and number, a standard infantry division will approach the ideal of being air-transportable with the necessity of substitutions of light equipment tending to disappear.

4. Airborne Personnel.

a. In paragraph 2 a it is recommended that all personnel meet the parachute standard and that individuals be trained to enter combat by parachute, glider and air transport. This recommendation is made to retain the superior combat qualities of Airborne troops and to provide greater flexibility in the employment of the subordinate elements of the division. Battle experience has shown that parachute troops possess aggressiveness and initiative in a superlative degree. These have been and should continue to be the outstanding characteristics of an airborne division which finds its missions in situations of particular hazard. The investment of selected personnel is definitely worthwhile to assure the results desired from the commitment of airborne troops.

b. Furthermore, experience has shown that parachute troops can be used in more situations than gliders. All Airborne operations in Europe were essentially parachute with gliders used to stiffen and reinforce the parachute formation. Nevertheless, the Airborne division should be ready to use gliders extensively under favorable conditions. Thus, it becomes necessary to have a division uniformly trained for all means of air transport - parachute, glider and airplane.

5. Supplementary Items of Airborne Equipment. The substitute items of equipment recommended in paragraph 2 b above are comparatively few:

1 - 75mm pack howitzer complete, for each FA piece, Infantry division.
1 - 75mm recoilless gun for each heavy AT gun, Infantry division.
1 light MG Cal..30 for each Heavy Machine Gun.
1 light bulldozer R-2 for each D-6 bulldozer.
1 - 55 cu foot airborne Set No 1, (Air compressor) for for the standard compressor, Infantry Division.

This short list is all the substitution now considered necessary for an Airborne operation although the list must be revised when new tables are provided for the Infantry division. This additional equipment would be held in the hands of supply services and drawn by the airborne division when a specific airborne operation is imminent.

6. Parachute Maintenance Company. The present Airborne division contains a Parachute Maintenance Company for the packing and maintenance of parachutes. It is felt that this organization should not be organic in the Division but a few such companies maintained for attachment to Airborne divisions or Airborne corps in advance of operations. This company would be charged with the procurement, storage and maintenance of all Air Corps equipment and all special Airborne equipment such as Airborne demolition kits, machine gun containers, folding litters, parachutists' medical kits, assembly aids, parachute first aid packets, etc.

7. Pathfinders. At the present time, pathfinder teams of specially trained personnel to drop in advance of an Airborne operation and mark drop zones and landing fields are maintained in an Airborne division. Before an Airborne operation they are lent to the Troop Carrier Command from whom they receive special training. As the navigation to the objective area is strictly an Air Force responsibility it is felt that the Troop Carrier Command should provide the pathfinder personnel in the future.

8. Conclusion. The recommendation herein has the great merit of simplicity in eliminating a special type of division. If it is accepted, the Airborne Division of the future will be merely an Infantry division with an additional attribute, the ability to close with the enemy by air.

MAXWELL D. TAYLOR,
Major General, USA,
Commanding.

A TRUE COPY:

E. STUDER
CWO, USA

THE GENERAL BOARD

United States Forces, European Theater

Study Number 16

APPENDIX NUMBER 9

Answer to General Board questionnaire by Brigadier General Stuart Cutler, Commanding General, 101st Airborne Division.

THE GENERAL BOARD
UNITED STATES FORCES, EUROPEAN THEATER
APO 408

QUESTIONNAIRE FOR COMMANDERS AIRBORNE DIVISIONS

1. Should the airborne division be eliminated in favor of standard divisions transported by air?

No. The personnel of Airborne Divisions have demonstrated their ability as superior fighters to standard divisions. The fact of being volunteers and knowing they will be subjected to hazardous missions causes the individual to use more initiative in the accomplishment of his mission. An "esprit de corps" found in airborne divisions lends itself to a higher state of efficiency. The morale effect on the enemy is two fold, first, the mere presence of airborne troops in the theater constitutes a real threat causing the enemy to withhold reserves; second, the actual employment of the troops definitely disrupts the enemy as it is impossible to determine the strength employed, where they will strike after landing, and subjects the enemy to losing large forces and strategic positions. Airborne troops are specialized and technically trained permitting them to make battle landings under adverse conditions, assemble and perform a mission. It is not believed practical to train standard divisions to this degree due to the expense, time and effort, and the required facilities which must be made available. Standard divisions however should receive basic training which would be adequate to perform an air landing mission either by cargo aircraft or gliders.

2. Could standard divisions be used for airborne operations (as for amphibious operations) if used in conjunction with parachute units in combat?

a. For "air landing" operations - yes, but for strictly "airborne" tactical Landings - no. It is not believed practical to employ airborne troops of less than a division scale, thereby, providing a complete tactical and administrative unit. Although standard divisions could be used as air landing units, it is believed that better success could be obtained by using strictly airborne troops for all phases, parachute, glider, and air landing operations and where reinforcements are needed they should be airborne. Standard divisions would be required to alter their organic equipment and T/O organization to accomplish an airborne mission which could effect their efficiency as a fighting unit.

b. What major items of equipment should be in each recommended parachute unit? (Include modification of present equipment or substitution of latest type weapons.)

The present T/E for major items of equipment is adequate during the initial phases of an operation. If airborne divisions are to be continued in prolonged ground action after landing (which is contrary to doctrine as prescribed in War Department Training Circular 113, but was done in this war), it is recommended that additional organic transportation be added to the present T/E which would come forward with the ground echelon as soon as joined by

friendly forces. This would enable the division to operate more efficiently for a longer period.

This situation would be elininated since it is recommended in the answer to other questions that an airborne division be organized in accordance with a standard post-war division. Also, the 57mm and 75mm recoilless rifles should be added as organic to the parachute infantry and artillery units. The adoption of the M2 automatic carbine in lieu of the submachine gun has been found to be a definite advantage.

c. What should be the primary and secondary tactical roles of such parachute units?

This question is answered under paragraph 3 b.

d. What changes in current War Department doctrine on the employment of such parachute units should be made?

This question is answered under paragraph 3 c.

3. Should the airborne division as generally conceived at present be retained in the post-war military establishment?

Yes. Airborne divisions have definitely proven their capabilities and worth in this war, therefore it is not feasible to discontinue this type unit thereby losing the benefit of the experience of individuals in the continuance of further development and improvement of efficiency. In addition to maintaining an airborne division, the personnel should be highly trained in all phases in order to provide an adequate cadre for additional divisions when needed. In addition to their military value it can be conceived where an airborne division could be used as a speedy means to quell civil disturbances, render assistance in case of a catastrophie, i.e. storms, floods, fires, etc. Also in view of a general world wide unrest at present and which perhaps will continue for the next few years during the period of reconversion following the war, the necessity might arise for the rapid occupation of a strategic place until additional reinforcements could arrive. Airborne troops could be used to accomplish this mission immediately. The President of the United States made a statement recently in which he emphasized the necessity for a navy, much air power, and modern airborne armies as they were the threats of the future.

a. Is the present table of organization satisfactory for the mission currently assigned the airborne division? No. If not, what changes should be made? (Composition and purpose of all subordinate headquarters and units down to include separate companies, internal companies, and separate detachments) (Should there be more than one type airborne regiment? No. If not, should it be parachute, glider, or a combination of the two?)

The post-war Airborne Division should be exactly the same as a standard division as to tables of organization and tables of equipment with the following additions: For a combat operation two (2) General Surgical Teams, with full equipment, be attached to each division; that two Officers per platoon be provided in all infantry and engineer units; that each field artillery battalion be authorized a total of nine forward observer sections complete

with personnel and equipment; that pathfinder personnel be not organic within the Airborne Division.

All personnel of the division should be trained to enter combat by parachute, glider, and air-transport; no distinction should be made between glider and parachute units or personnel; all personnel of the division should receive extra pay for hazardous duty at the rate of $100.00 per officer and $50.00 per enlisted man per month; and that all personnel be volunteers who meet certain rigorous physical standards. There should be only one type airborne regiment trained in all phases of airborne.

b. Does your experience indicate that the missions presently assigned the Airborne Division (Par. 996 FM 100-5, Training circular 113, etc.) should remain unaltered or that they should be changed? Yes. Why? Actual missions accomplished in combat were in conformity with prescribed missions which proves they are tactically sound.

c. What do you consider to be the primary and secondary roles of the airborne division? Should any change be made in current War Department doctrine?

Primary Missions-:

(1) Seize, hold, or otherwise exploit important tactical localities in conjunction with or pending the arrival of other forces.

(2) Attack the enemy rear and assist a breakthrough or landing by the main force.

(3) Block or delay enemy reserves by capturing and holding critical terrain features.

(4) Delay a retreating enemy until the main forces can overtake and destroy him.

Secondary Missions-:

(1) Capture enemy airfields.

(2) Create diversions.

(3) Reinforce threatened or surrounded units.

(4) Seize islands or areas not accessible to other ground forces.

(5) Capture or destroy vital enemy installations, thereby disrupting his system of command, communication, and supply.

(6) As a constant threat by their mere presence in the theater of operations thereby causing the enemy to disperse his forces over a wide area in order to protect vital installations.

The doctrine should be changed as applies to the duration of a mission. As presently stated airborne troops should

be relieved in from three (3) to five (5) days. Experience has proven that it was not possible for theater commanders to replace an airborne division after it has engaged in its initial operation due to the difficulty of diverting a relieving force through the usually crowded lines of communication and supply. Airborne divisions should be relieved from an operation as soon as it is practicable. The airborne division must, therefore, be made self-sustaining throughout its initial operation and for the period of time which elapses while the battle by-passes the initial position or until adequate replacements can be made available.

d. Is the equipment provided by current T/E for the airborne division satisfactory? No. If not what changes should be made? (Include opinion as to the use of 4.2 chemical mortar, recoilless weapons, and the like.) (Statement of types and number of vehicles essential to operation after division has landed.)

That the Airborne Division be authorized to carry on its T/E as supplementary equipment a 75mm pack howitzer, complete, for each field artillery piece; a 75mm recoilless gun for each antitank gun; a light machine gun, cal..30, for each heavy machine gun; a light R-2 bulldozer for each D-6 bulldozer; and a 55 cu ft A/B Set No 1, (Air compressor) for each standard air compressor. A 25% increase in all signal equipment to be brought in by parachute or glider prior to an airborne operation.

The 4.2 chemical mortar is not recommended for airborne use due to the excessive weight of the gun and ammunition. The question as to types and number of vehicles essential to operation after the division has landed is rather difficult to answer at this time. It is recommended that the post-war airborne division be the same as a standard division therefore it is reasonably safe to assume that enough ¾ ton trucks would be on the T/E for the airborne phase. This assumption is based on the fact that present glider regiment, which is organized the same as a standard regiment, does have adequate transportation for the airborne phase. The artillery battalions would perhaps need a suitable prime mover capable of being transported by air in addition to the authorized organic transportation.

4. Can the airborne division be made capable of sustained action over a period of weeks without other than airborne supply and support?

Yes.

The terrain selected should lend itself to the following:

(1) Provide adequate LZ's for gliders so that adequate transportation and antitank guns can be landed.

(2) Provide natural defensive positions.

(3) Facilities available for air evacuation of casualties.

(4) Since a perimeter defense must be established it would be preferable to use more than one division.

(5) Complete air superiority must be maintained 24 hours a day.

(6) Weather forecasts must be favorable during this period in order to assure resupply by air.

5. Should glider pilots be integral members of the airborne division? Yes. Why? Should assistant pilots, who are members of such divisions, be trained as glider pilots?

The present system is a large waste of manpower whereas they could be effectively used in the Airborne units. They are not at present trained adequately to fight in combat as a part of a team, they have no specific unit which assumes any responsibility for them, and the evacuation to their home base makes it more or less an individual responsibility. If they are an integral part of the division assigned to companies/batteries, they can receive the necessary ground training and perform an assigned job in combat. An assistant pilot should definitely be a trained glider pilot and should come from the officers and NCO's of companies/batteries.

6. Additional Remarks.

Due to the fact that troop carrying airplanes were only available in limited numbers and were used extensively for POL and other supply of ground armies, the possible use of airborne operations were constantly weighed in this war against the loss of the lift for the air supply of ground divisions. The result was that many airborne operations which might profitably have been used were cancelled because the troop carrying airplanes were needed at the same time for the air supply of ground divisions. Airborne divisions must have their air vehicles both for continuous training and for airborne operations, and it is not considered practicable to use the same troop carrying airplanes for the air supply of ground troops and for the training and airborne operations by airborne troops. Even the pilots of these airplanes, when engaged in air supply of ground troops, deteriorate rapidly from their normal efficiency required for airborne operations. The conclusion is therefore reached that it is absolutely necessary that airborne divisions must have attached to them (or to the airborne Corps or Army) sufficient troop carrying airplanes for their exclusive use. It is believed that, if troop carrying airplanes are needed for air supply of ground divisions, separate troop carrying groups should be allocated to the ground armies for this purpose in the same manner that QM truck companies would be allocated.

FOR GENERAL CUTLER:

/s/ NED D. MOORE
Colonel, Chief of Staff

A TRUE COPY:

J. E. STUDER
CWC, USA

THE GENERAL BOARD

United States Forces, European Theater

Study Number 16

APPENDIX NUMBER 10

Letter of Lieutenant General Wade H. Haislip to Commanding General, United States Forces, European Theater, dated 28 July 1945.

HEADQUARTERS SEVENTH ARMY
APO 758 US ARMY

28 July 1945

a. (1) With the exception of numerious small parties of highly trained personnel parachuted into Southern France prior to the landing to assist and lead resistance groups and Maquis, and whose mission may be considered as strategic, Seventh Army has had experience with only the Sicilian and the Southern France airborne operations. In both these operations, the airborne mission was primarily tactical, and, it is believed, that the primary mission of airborne troops in the current war has been tactical.

(2) It is believed that the future primary role of airborne troops will be both strategic and tactical.

(3) It is estimated that the ratio of one (1) specialized Airborne Division to ten (10) standard Infantry Divisions is a reasonable proportion for the post war military establishment.

b. In a relatively modest Regular Army, it is believed that the Airborne Division should still be maintained in order that new techniques, experimental changes in T/O, and employment as a division in maneuvers may be carried out for the benefit of the Army as a whole, and to provide a sound basis for further development of the airborne arm, in the event of a future war. On the other hand, it is recommended that all divisions be trained in glider borne and air landing operations, particularly the latter. Separate parachute regiments and aerial re-supply companies should be maintained.

c. Sufficient troop carrier groups to lift a maximum of three airborne divisions should be maintained. This would insure that an operations of two division strength could be mounted, with an adequate reserve to maintain it.

d. Airborne elements should operate through Army Ground Force channels, since they perform their combat missions on the ground, however, close liaison with Army Air Forces should be maintained in order that necessary items of Air Corps supply can be readily procured and in order that Airborne and Troop Carrier units are so located as to permit combined training.

e. (1) An airborne training center should be maintained for essential research and development of airborne tactics, technique and doctrine, supervised by a carefully selected board of experienced officers.

(2) Under Army Ground Force channels, for the reasons listed in sub-paragraph d above.

f. Recommend that an advisory staff group be included in the War Department under the Chief of Staff. This advisory staff group, working in close liaison with the Airborne Training Center, could advise on all major matters of policy, organization, equipment, tactics, and technique relating to airborne forces.

g. The following factors are deemed of outstanding importance in retaining our superiority in the airborne field:

(1) Continuous training of new personnel in all phases of airborne operations.

(2) Development of better navigational aids, and training of using personnel.

(3) Development of aircraft and gliders capable of transporting more and heavier supporting weapons with an airborne force.

h. Experiences in Airborne operations, and in the employment of Airborne units in a ground role have brought out the following:

(1) A need exists for more efficient signal equipment than the present issue. For example, in the Southern France operation, the Airborne Task Force was unable to establish communication with the Command Ship for many hours. Army headquarters first learned of the success of the operation from an on-the-spot broadcast by a BBC announcer.

(2) In general, airborne divisions do not handle supporting and attached units as efficiently as do standard infantry divisions. A better program of combined training is essential.

(3) Airborne divisions are particularly lacking in knowledge of the efficient use of motor transportation. In this respect they are far below the standards of average infantry divisions.

/s/ Wade H. Haislip
/t/ WADE H. HAISLIP
Lieutenant General, US Army
Commanding

"A CERTIFIED TRUE COPY"

J. E. STUDER,
CWO, USA.

THE GENERAL BOARD

United States Forces, European Theater

Study Number 16

APPENDIX NUMBER 11

Letter of Lieutenant General John K. Cannon to Commanding General, United States Forces, European Theater, dated 15 August 1945.

(Basic ltr fr War Dept, Wash, DC, File AG 322, dtd 27 June 45, Subj: "Airborne Forces in the United States Post-War Military Establishment.")

322. 1st W/Ind.

HEADQUARTERS US. STRATEGIC AIR FORCES IN EUROPE, APO #633.

TO: Commanding General, United States Forces, European Theater (a), APO #887, U.S. Army.

1. In compliance with 1st Indorsement to ltr, War Department, File AG 322, (26 June 45), OB-S-WDSSP, Subject: "Airborne Forces in the United States Post-War Military Establishment", 27 June 45, comments of the following-named officers assigned to the 50th Troop Carrier Wing are inclosed herewith:

Brig. Gen. Ralph F. Stearley
Brig. Gen. Julian M. Chappell
Colonel William H. Parkhill
Colonel F. S. Henley
Lt. Col. Chester C. Bridgman, Jr.
Lt. Col. Paul W. Stephens

2. a. This Headquarters is continuing its effort to obtain the comments of other qualified officers.

b. The following-named officers who have departed from this Theater have had considerable experience with airborne forces and it is believed that they are well qualified to comment on the subject:

Name	Rank	ASN	Pres Dy	Pres Location
Paul L. Williams,	Maj. Gen.,	010600	CG, IX TCC	Hq IX TCC, PM, NYPOE
Harold L. Clark,	Brig. Gen.,	Unknown	CG, 52 TCWg	Unknown
Leonard J. Barrow,	Colonel,	0373798	CO, 349 TCGp	Hq 349 TC Gp, PM NYPOE
Charles H. Young,	Colonel,	0359798	CO, 439 TCGp	Hq 439 TC Gp, PM NYPOE
Adriel N. Williams,	Colonel,	028877	CO, 436 TCGp	Hq 436 TC Gp, PM NYPOE
Donald J. French,	Colonel,	022422	CO, 438 TCGp	Hq 438 TC Gp, PM NYPOE

3. It is desired to emphasize the fact that the indexed comments are the comments of individuals and do not necessarily reflect the opinions of the Headquarters.

4. The opinions of this Headquarters are as follows (Original question preceding the opinion in each case):

(a) QUESTION: CONSIDERING AIRBORNE OPERATIONS OF THE CURRENT WAR, WHAT, IN YOUR OPINION, HAS BEEN THE PRIMARY ROLE OF AIRBORNE TROOPS (a) TACTICAL, (b) STRATEGIC AND (c) COMBINATION OF BOTH STRATEGIC AND TACTICAL?

ANSWER: Airborne troops in this Theater were limited in employment almost exclusively to a tactical role. They have been committed in support of, and almost simultaneously with, other operations such as beach landings or a land offensive. While the constant threat of employment of airborne troops forced the enemy to prepare defenses in depth, and to take other precautions, the strategic influence which might be inferred was of relatively minor significance.

(b) QUESTION: WHAT DO YOU CONCEIVE TO BE THE FUTURE PRIMARY ROLE OF THE AIRBORNE TROOPS?

ANSWER: The role of airborne troops of the future will undoubtedly be of a more strategic nature. Such employment will be influenced considerably by the progressive developments which will be made in airborne equipment, developments and promulgation of airborne doctrine, and the resultant increased appreciation of the potentialities of airborne operations by commanders of the future.

(c) QUESTION: BASED ON YOUR ANSWER TO (b) ABOVE, WHAT REASONABLE PROPORTION SHOULD OBTAIN BETWEEN SPECIALIZED AIRBORNE DIVISIONS AND STANDARD INFANTRY DIVISIONS IN THE POST-WAR MILITARY ESTABLISHMENT?

ANSWER: The proper proportion of specialized airborne divisions to standard infantry divisions appears to be a matter of national policy. The decision must be reached after a study of requirements based on an analysis of the likely enemies the U.S. will be forced to engage in future wars. In other words, it is believed that considerations governing the organization of future airborne troops should not be viewed in terms of their proportionate relation to other troops but rather in terms of the requirement for airborne units in the planning of any contemplated action.

(d) QUESTION: RATHER THAN SPECIFICALLY DESIGNATED AIRBORNE DIVISIONS, WOULD IT BE PRACTICABLE OR DESIRABLE IN A RELATIVELY MODEST REGULAR ARMY TO ENVISAGE ALL DIVISIONS TRAINED IN AIRBORNE TECHNIQUE AND OPERATIONS? WOULD SUCH A VIEW HOLD IF SEPARATE SPECIALIZED UNITS WERE MAINTAINED, AS PARACHUTE UNITS?

ANSWER: If it is an accepted principle that airborne units should be made up of specialized troops, it seems unlikely that troops could be trained to a proper level of shock-troop efficiency unless their training is concentrated almost exclusively on matters dealing with airborne employment. Naturally, the training (and consequent availability) of all ground troops in airborne operations would be desirable but it is felt that the practical considerations involved may preclude such training. It would seem that troops primarily trained and equipped for airborne employment could acquire considerable finesse in the technique of purely ground units whereas the reverse would not necessarily apply. Every effort should be made, however, to study the feasibility of giving all troops a rudimentary course of training in airborne technique.

(e) QUESTION: ON WHAT MAXIMUM LIFT CAPACITY WOULD TROOP CARRIER GROUPS BE AVAILABLE FOR AIRBORNE PURPOSES, EXPRESSED IN TERMS OF AIRBORNE UNITS TO BE LIFTED?

ANSWER: Since the developments of this war have indicated the requirement for greater concentration on the study of airborne employment, it would be difficult, if not impossible, to express in any sort of concrete terms the relationship between troop carrier groups as we know them today and airborne units as now organized. It is felt, however, that our overall policy should be directed toward the specific allocation and maintenance of sufficient air lift capable of dropping approximately 30% of the nation's airborne force at any one time.

(f) QUESTION: THROUGH WHAT COMMAND CHANNELS SHOULD AIRBORNE ELEMENTS OPERATE?

ANSWER: It is believed that basicly, Airborne troops represent the same relationship to the Air Force as Marines represent to the Navy. In the latter case, Marine troops have always been primarily organized as "landing parties" for the purpose of taking shock action, to be followed up later by the mass employment of Army troops. Airborne troops are the "landing parties" of the air. As has been the experience in the current Pacific war, the number of naval landing parties as are available has determined the extent to which they could be committed strategicly or tactically. Air Force landing parties should be developed along similar lines and it follows that command should be exercised through normal Air Force channels.

(g) QUESTION: WHAT AGENCY SHOULD BE MAINTAINED FOR ESSENTIAL RESEARCH AND DEVELOPMENT OF AIRBORNE TACTICS, TECHNIQUE AND DOCTRINE? UNDER WHAT COMMAND CHANELS SHOULD IT OPERATE?

ANSWER: Many or most of the basic facilities for research and development of airborne technique are already in existence but, unfortunately, are not sufficiently integrated for maximum realization. As has been proven in the development of other specialized units and specialized equipment, the most productive experimentation and recommendations have come from the combat organizations on the field of battle. As a substitute for battle conditions, the closest approximation could be obtained through combat maneuvers of constituted units. Such units would seem to be more properly developed and contemporary research exploited through the establishment of an overall Airborne Command. The Airborne Command should operate directly under the C-in-C, U.S. Air Forces, who, as a member of the Joint Chiefs of Staff, would be the logical one to direct further development, instruction and training.

(h) QUESTION: IN VIEW OF THE FACT THAT AIRBORNE FORCES COMPRISE ELEMENTS OF THE AIR, GROUND AND SERVICE FORCES, SHOULD THERE BE INCLUDED IN THE WAR DEPARTMENT AN ADVISORY STAFF GROUP TO WHICH SHOULD BE REFERRED ALL MAJOR MATTERS OF POLICY, ORGANIZATION, EQUIPMENT, TACTICS AND TECHNIQUE RELATING TO AIRBORNE FORCES? IF SO, WHERE SHOULD IT BE INCLUDED?

ANSWER: The answers to previous questions above, and more specifically the answer to question (g), would obviate the requirement for an extensive Advisory Staff Group. The determination of all matters of policy, organization, Equipment, Tactics and technique would be a function and responsibility of the already integrated Airborne Command operating under the direction of the Joint Chiefs of Staff through the C-in-C, U.S. Air Forces.

(i) QUESTION: WHAT FACTORS ARE DEEMED OF OUTSTANDING IMPORTANCE IN RETAINING OUR PRESENT SUPERIORITY IN THE AIRBORNE FIELD?

ANSWER: The element of TIME has probably been the most significant single factor which has continually exercised considerable influence in military operations since the beginning of warfare. With the recent rapid development of high-speed means of communications during the past forty years, the TIME factor

has become one of increased importance. It is not unreasonable to believe that time will exercise an even greater influence on warfare to come. Maintenance of our present superiority in the airborne field, therefore, gives us the advantage of having on hand and capable of immediate use, a force which is superior both in training and equipment to that of any potential enemy. Airborne superiority, however, must be analyzed in terms of quantitative and qualitative factors only. In order to reap the advantages of this superiority, it is absolutely essential that we make ourselves capable of utilizing this superiority but by maintaining a similar postion in all other fields of Air Force development and progress. A powerful airborne force of the future must necessarily be dependent on adequate means for defending such a force on its home bases and also depends on a comparable escort force that can see it safely to its objective. Airborne troops actually represent only one phase of the multitudinous factor which goes into the making of a balanced Air Force.

JOHN K. CANNON,
Lieutenant General, USA,
Commanding.

1 Incl: "Comments on Airborne Forces in the U. S. Post-War Military Establishment"

"A CERTIFIED TRUE COPY"

J. E. STUDER,
CWO, USA.